Just in Case, not Just in Time

- **Pantries & Preparedness like Grannies knew, and so can you.**

Preface & Perspectives

Definitions: For the purpose in this document (not “official” ones!), I use the following terms to mean these types of behavior and thinking / reasons behind them:

Prepper = Someone who prepares for long-lasting or even multi-year, intense, large-scale supply disruptions, catastrophes, or even some doomsday scenarios. This usually also involves not just food supplies to last for years, but also varying degrees of generating your own energy, purifying one’s own water, and some form of sewage management, for months and years to near-indefinitely.
Hoarder, Hoarding = piling up a very large amount of things you will (most likely) never use and thus get wasted. This is usually done out of panic / anxiety, because you got some faulty information, or out of serious mental illness. There is no shame in falling into the trap of panic or falling for faulty information, we all can accidentally hoard something like that at some point in our lifetime, while if no such reasons are involved and you find yourself hoarding things, maybe it's time to seek counseling.
Preparedness = being prepared for the kind of things that have a realistic chance to eventually happen in your life. This ranges from everyday hiccups (e.g. fridge breaks down and takes a few days to a week or three to replace or repair) to supply disruptions of something you love, which is now for a while unavailable or very expensive (bad harvest, local disaster, or war in the region it mainly comes from, one or more main manufacturers going under). It also covers natural catastrophes like floods, hurricanes, or earthquakes that disrupt the infrastructure for food, water, and power in your area for a while, as long as your home is still standing and not a soggy mess. Or purely personal things like something went sideways economically for you and your family, and you need a month or even half a year to recalibrate. Having enough food to feed yourself in that situation gives you peace of mind, rather than having to panic about when you'll start starving.
This is the kind of preparedness our ancestors practiced habitually, as they knew they could not rely on anything but themselves and their local network of neighbors, family and friends, and only in sketchy ways on “the authorities”. Of course there is no clear dividing line between general preparedness and preppering, it is a spectrum, and at the upper end of what I describe in this document, you are already dipping into a bit of Prepper territory for sure.

This document is not intended for full-fledged “Preppers”, even though it also draws on some knowledge and experiences they have. It is written for those who want to have some sensible, basic preparedness, and use some household wisdom and sensible practices “like great-granny did”, but adapted to the modern world.

My perspective on prepping: There are two basic ways to do it: 1) You are willing to go “living like the Amish” as the community-based low-tech version. 2) You go really deep into everything involved in true prepping the modern way. Both involve a lot of learning and figuring things out, and for the latter path also spending tens or even hundreds of thousands of dollars (or equivalent in your currency). That's to go fully off-grid as a homesteader with your own water supply (a well or cistern, plus water treatment), your own energy generation, food preservation and production, and on top of that a stockpile of provisions including ammo to defend your farm fortress. And that's assuming you already own suitable property, otherwise that adds a lot more to your prepper-bill. Otherwise it makes in my opinion little sense to go full prepper for most people, once you really think about all that is involved and the real risk scenarios. I say this not to dismiss people who go to or close to that level: If you can and want to, by all means do, it can even be a lifestyle and culture of its own. But to truly, genuinely practice doomsday prepping for multi-year self-sufficiency without giant points of failure likely awaiting you in the very unlikely event of a multi-year, catastrophic collapse of infrastructure happens, that is a truly massive undertaking, let's not fool ourselves here.

The perspective of this document (and my approach): This document comes from a very different way of thinking than true “prepper thinking”, and thus a different approach to risks, risk mitigation, and resilience, just as also in some ways to life itself. It might nonetheless differ from what you are used to, and also what you can read and hear a lot about on the internet when it comes to food storage and other matters of preparedness. Take what makes sense to you and ignore the rest, for this handbook is not meant to be your “preparedness bible”, but to open doors for you into this territory.
The core audience for this document are people who do not have much experience with stock-keeping, running a little or medium-sized household pantry and other supplies, and in general having a bit of “mental and material insurance for the hiccups in life”, but would like to have some solid foundations laid out, and to read maybe for the first time about things they can then dig deeper into elsewhere than what this document offers.
It may also be useful for those who already do these things to varying degrees, as it offers plenty of ideas and long lists of items to choose from for one’s own pantry, general stockpiles and related practices. We all constantly learn something new, and discover new uses of things we already know or have.

This document is not intended to teach you specific methods or hand you “recipes”, even if I sometimes mention some. It is meant to help you understand certain principles & mechanisms, which you can then use flexibly adapted to your own desires, needs and use cases.
It is also meant to offer you a solid foundation of information and ideas, but you absolutely will have to, and should consult plenty of other sources if you really want to get into certain things you don’t really know much about yet. I will mention such topics throughout the text, or when I don’t fully explain specific methods that would go beyond the scope here.

It is also meant to potentially introduce you, if not already present, to a maybe new way of thinking and approaching things related to its main topics, and a little bit maybe even life itself. Such can save you a lot of stress and money over time, and reduce your concerns about the uncertain future we all always face, rather than feeling paranoid or anxious about it.

The background of the information: This document is written from the perspective of a European, so there might be some elements missing typical or common elsewhere in the world, and introduce some novel concepts to some non-Europeans.
Where possible I try to bridge things as well as I can, including regarding a sometimes slightly different approach to things than you might be used to if not from certain parts of Europe, which I won't claim to be better or worse – as with all things, it most likely has its own strengths and weaknesses.
That is why sometimes I go into details about certain things that might be utterly common sense to some readers, while novel concepts to others, or which sound dangerous (or even icky) at first, going by what you heard until now. Everything I state here though is done in good faith. My sources are a mixture of official recommendations and information typical in Europe, common practices, the knowledge handed to me by my family, and a lot of my own reading – not just about how things are done in Europe, but around the world, to compare methods, approaches, and results. Even if I might sometimes be preaching to the choir with some things I elaborate a lot on, I might offer a previously unheard tune for some readers that requires a lot of explaining.

This document is of course also written from my own, personal perspectives and philosophies about resilience and preparedness, my perspectives and approach to life – if yours are different, you might go about things differently, and some parts of this document are not for you, and that's fine. We all have more or less different perspectives, not necessarily always better or worse, just different – unless there are real, factual, material reasons why some perspectives, ideas or methods might be dangerous or faulty, without us even being aware of it.

Regarding warnings and other repeated points: I will sometimes also harp on a specific point more than once, usually the very few things that are real risks to mitigate with certain practices, or common mistakes or points of failure. Please understand this in its context here: I am not trying to legally cover my rear end. When I warn about something this is not a warning to filter out as usual "standard warnings and disclaimers". When I give a warning, it is a real one – not to cause panic, but to raise awareness. And I'll usually also offer either mitigation strategies which turn the risk into something most probably can live with, or reduce it to near-zero in real-life practice. Or, if that's not possible, I'll make it clear that this is a risk which (to my knowledge) cannot be safely mitigated beyond "just don't do that, period", unless you consciously choose to accept this non-zero, non-trivial risk. We all have different risk tolerances, and as long as you are aware of the risks, you can make your own choices as an adult.

The philosophy behind this document

Here is my take on preparedness, which will permeate a lot of the thought and principles you find in this document, and also the intention behind. Read everything here with the understanding that it comes from this particular perspective of one person, and YMMV = your mileage might vary, and that is fine. Take what you find useful, ignore the rest, including the philosophy behind it, if it is not your jam.

From my perspective, if in our industrialized world the infrastructure to supply us with everything from food to toilet paper, from water and power to sewage and trash collection breaks down for more than a few weeks (if that much), we have other problems than (just) how to fill our mouths and wipe our rear ends, because then we quickly enter “Mad Max territory, early version”. Some people who are starving and desperate and panicking are willing to do horrendous things, and they will come first for those suburban homesteaders and preppers with their extensive backyard gardens, chicken coops and giant stockpiles of food in the basement and the solar panels on the roof.
I am saying this not to deter you from having your backyard veggie garden and getting a solar panel on your roof, or at least a little extra “balcony” mobile solar panel as a spare / extra. Just maybe be a bit more realistic than what you find in certain types of prepper-talk, which too ignores easily what every large-scale long lasting catastrophes almost always causes in real events, as seen in disaster zones where something like that on a sufficiently large and prolonged scale happened.

In my opinion that kind of “absolute, prolonged crisis scenario” is extremely unlikely for most regions of the world, based on actual facts, statistics, and structures I looked into, not just idle hope. Even if you want to, you can’t easily prepare for something like that by merely going off the grid and stockpiling. Not unless you live really fairly remote and also have the means to defend your prepper-fortress of sorts, e.g. like some pioneers of the Wild West did. It is highly doubtful you can achieve anything remotely close to that with your suburban homesteading. Growing some extra veggies in your suburban backyard can be a nice bonus in some situations, but it can also expose you to even more risks, or all your preparation gets wiped out so fast it was all for naught anyway. Hoarding can be even very counterproductive to this kind of prepping, if done wrong. You can’t truly prepare for something like that, not without outrageous amounts of effort – and even then it's doubtful.

You can be more prepared for even such a scenario, that is an important difference – and it doesn’t take as much effort as true “doomsday prepping”, while actually being highly useful in your normal life, and also its occasional “hiccups in life”. If you mostly prepare for many smaller types of hiccups in life, and then a bit extra if you want to, you can end up with a preparedness level that could probably see you also through such multi-year catastrophic collapse scenarios, unlikely as they probably are – not by having tons of supplies and your own private infrastructure, but by having the basics covered and the necessary knowledge and other tangible and intangible resources, which matter both in “normal hiccups and smaller disasters” as well in “doomsday scenarios”.
If you prepare for many of these smaller hiccups in life most of us will experience at least once, if not a few times in life. As a side effect of generally good practices, you will also reap reak benefits for your life right now. These things and benefits are simple things, like:

- Having or developing good mental resilience so you don't panic when others do, and you can respond calmly rather than react blindly or emotionally. This is useful not just in true crisis situations, but also for anything from not freaking out when your car breaks down to losing your job. You don’t agonize, you organize – and you know how.

- Having or developing lots of usable problem-solving skills and creative thinking, which also means having a decent foundation of knowledge useful not for merely crisis management, but life in general: From cooking and cleaning to household remedies to organizing a variety of things to most basic first aid to some basic understanding about physics, chemistry and biology. Not as a MacGyver, but someone aware of how the world and the things you work with actually, well, work.
- Knowing how to source things in more than one way – having or developing, whenever needed, multiple ways of how and where to find and do things, including cheaper or improvised ways.
- Having good social networks to help each other out as none of us can do well for long all on our own.
- Having good ways to quickly get information when you need it (including when the power / internet are down…), and having or developing good life long learning practices and a curiosity about the world around you.
- Having a solid foundation of understanding about risk awareness, risk mitigation and management, and where needed also risk acceptance, and with it also knowing and understanding your own risk profile and risk tolerances.
- Knowing that you always know less than you probably need, and are not perfect, but also knowing that perfection cannot be allowed to be the enemy of the necessary and the good. And knowing that everyone else also rarely has all the information and answers, just maybe some useful ones here and there.
- Note how only now, yes, we get to: having your well-thought-through little stockpile of things useful for your daily life as well as for “hiccups and worse”, custom-tailored to your personal risk profile, risk tolerance, needs, desires, and capabilities. And that might include running your own, well stocked pantry of the size that makes sense to and for you, and also of some other reasonable stockpiles of various items – few of them “just for when a major crisis hits”, most very dual-use.
- Only after covering all the above bases well enough, one can start thinking for real about even more advanced stuff of “Preparedness to Prepper territory”, if that fits one’s personal risk profile, risk tolerances, and personal desires and capabilities. From having a little bug-out-bag ready (read up on what that is if you don’t know), to some little special emergency items not really needed in everyday life but potentially during even just “brief hiccups”, to going allll the way to going off the grid full prepper homestead with your own septic tank and water supply and electricity generation and food production. If the points above weren’t well enough covered beforehand though, most of these material things will neither help you much in normal life (besides maybe being fun or peace of mind for you, which is enough reason on its own!), nor will they most likely be as useful in a crisis as those points above.

Running a nice little personal pantry and other stockpiles, done right, can help you in everyday life to

- never really run out of things,
- cushion price spikes,
- organize your life in ways that long term make it easier for you to live your life,

- save a nice bit of money if you do it the right way rather than the needlessly expensive way.
- As a bonus, it offers you the kind of peace of mind when hiccups in the supply chain happen, and buy you time to recalibrate.

An important piece of advice: **Don't run your pantry out of anxiety, run it out of abundance**. Fear and anxiety, or even panic, cause us to make poor decisions. They make us see the world through a lens of scarcity, insecurity, and powerlessness. If you run your pantry from such a perspective, every time you look at it you will at least subconsciously feel reminded of this kind of mindset, and thus perpetuate it, and it will influence your entire life to also seem more filled with scarcity, insecurities and powerlessness.
If you run your pantry out of a spirit of abundance, it is an entirely different lens, and the effect flips. From this perspective you gaze at your well-stocked pantry with a smile and happiness about the abundance you have (no matter how much money is in your wallet right now). You feel not scarcity, you feel abundance. You feel not insecure and less powerful, but more secure and more powerful, because you know you have the supplies you need to weather many if not most life's hiccups better, if not even comfortably, combined with the knowledge of how to do so – and a lot of other, useful knowledge that flowed into creating your pantry and the other little stashes of supplies.

So if you follow this line of thinking you:

- First of all run your pantry and other supplies to make your life easier, more convenient, cheaper without sacrificing quality, and happier.
- Then you prepare for the likely but easily ameliorated or even neutralized risks and hiccups, plus the reasonably likely and truly dangerous scenarios. Only after that maybe you prepare for anything or everything else, if at all.
- Avoid the common and truly likely risks most of all; worry less about extremely rare risks no matter how catastrophic those would be (see next).
- Avoid, or properly mitigate if you can, the very rare, but very real risks with potentially catastrophic consequences you are absolutely aware of, but accept that there is always a risk to life itself – and eventually none of us is getting out of here alive.
- Don't prepare for what you can't or won't do anyway, don't get things you (most likely) won't use or eat anyway – instead, **get what you use and use what you get** first and foremost, everything else is "luxury extra levels" or "specific special preparedness" you can, but don't have to do.
- You never stop learning, for if you stop learning, you stop being good. You just will eventually need to learn less and less often, including from costly mistakes.

With this attitude and philosophy it makes sense to run your household and "prepare" like our great-grannies did, just adapted to the modern world of today. Not as a true "prepper" of the modern world, but just like great-granny keeping a pantry that sees you through a disruption for a few weeks, maybe even a month or three, just as if sudden price spikes or supply gaps for a specific item happen – and for a few specific things you really like/want/need maybe even up for a year or a little bit more to weather price spikes after bad harvests.

These weeks, months, or up to a year or more of stockpile buy you time – literally, because you bought those things when they were still cheaper and available. You can then adapt calmly while others scramble. And if a price spike hits, you're sheltered from the worst of it: you already bought at the old price, and by the time you need to restock, things may have settled down again, or at least your wages, pension, or whatever other income may have caught up at least a bit. Either way, you refill at your own pace, as and when it makes sense to you, not out of panic or necessity.
Of course if there is a localized disaster like a hurricane, being snowed in for a while and so on, you don't have to panic like others who only have a few days' worth of food at home and maybe a week or two of toilet paper. Similarly, you don't have to go out and get food when you are ill and need as much bed rest as you can get, or simply don't want to, not today, not tomorrow. While let's be real: If there is a giant earthquake / flood that levels your home, then any prepping stockpiles regardless of their size won't do you any good anymore.

This approach and philosophy long term saves you money and nerves, while giving you peace of mind and ease of running your household. Having extra levels of crisis preparedness as a result it is the beneficial side effect, not automatically the main aim unless you want to. There are many reasons why having your personal little pantry and pile of common supplies can be very useful, and long-term also saves you money and time if run well. Extreme-prepper mentality, just like real hoarding, is more often than not the opposite of all that.

Disclaimer

What I write here in this document is a mix of knowledge handed down to me by my family, people who even survived, among other things, two World Wars thanks to it, combined with what I learned from others, plus personal experiences. This does not mean that everything stated – no matter how confidently – in this document is the absolute truth, as everyone might be wrong about anything, including myself and my sources. Furthermore, your personal perspectives, tastes and needs as well as your life circumstances might be so different that some of the things stated here simply do not apply to you.
Therefore, take everything with a grain of salt, and also consult other sources beyond just this document to be genuinely well informed, especially anything that could impact your well-being or that of others – including and especially since food is always a major factor for well-being, as are other things touched upon here, from cleaning methods to medicine and beyond.

Also keep in mind: A lot of the information here is meant to give you foundations and good starting points, lengthy as this document already is, even "just" with that. There is a lot more that can be said about many of the things and items I describe. The lists are also far from exhaustive, from plenty of other storage methods to other great food items for your pantry, to entirely different philosophies about how to run a pantry & provisioning for various reasons, and the same goes for general preparedness. I open doors for you to understand rather than just to emulate, and invite you to think about these things yourself, with plenty of food for thought and ideas to start from. Then your pantry and preparedness will for sure look somewhat different than mine in the end – maybe even way better.

So do not consider anything here as the full picture and final say, but a starting point written mostly for those who have little knowledge and experience about how to run a private pantry and other types of basic supplies, as well as related topics like nutrition, health, and general preparedness. Nor take anything stated here as gospel, nor anything stated anywhere else: Errors, false information or dangerous omissions can happen everywhere, even official government recommendations get updated all the time for that very reason.

When it comes to matters of nutrition and medicine, please inform yourself thoroughly before you dabble with things you have no real clue about, and this document is not meant to be a sufficient source for this, it can just point you toward some of these topics to learn more about. Nor can household remedies like mentioned here and there in this document replace proper healthcare from a good physician. So if you can, always seek out professional care if you have a serious health condition, don't try to doctor yourself based on whatever ideas you get from this document without deeper knowledge.

When I mention canning, food preservation, advanced storage practices, household tricks, or other things that could be dangerous if done improperly, and tell you to "read up on it": Please take that seriously and inform yourself properly. Methods like vacuum-sealing food or making preserves are not that difficult to learn, but if you mess them up due to false or incomplete information, you can cause serious or even lethal harm to anyone who consumes such ill-preserved, ill-stored food. You can safely skim milk, but you cannot safely skim-read on these things.

And yes, I cannot guarantee everything I state to be 100% always foolproof & safe, it is just based on my knowledge and experience, and I can be wrong like any human being.

When you read up on any of these things, ***do not stop*** after consulting just one or two sources. There is a lot of good information on the internet about these topics, but also a lot of bad or downright dangerous information, and sometimes you have to go through 5-10 sources that either claim nonsense or omit important (safety!) things before you find a key information to know and then practice things properly. If you use an AI to support you in this, check sources thoroughly, as AIs can hallucinate.

None of these disclaimers are meant to scare you. They're a reminder of good practices when it comes to food storage, food preparation, household management, and healthcare. And they are a reminder that we're all imperfect humans, myself very much included, with our own blind spots and gaps. Don't take shortcuts when it comes to things as important as food, nutrition, and health. That's all.
And here now the legal disclaimer y'all knew would be coming: This handbook is a compilation of traditional and experiential knowledge, combined with modern scientific understanding – not certified health or food safety advice. Please consult official guidelines for commercial applications and officially recommended practices.
Now, let's have some fun with food, health, pantries and general preparedness :^)

Basic Rules & Guidelines

The kind of preparedness we are talking about here is "like granny did", so these are the general rules, written for someone who potentially has lived until today by the motto "I just get my ready-to-eat food every 2-3 days from the local supermarket", and thus might not know or understand a thing about "provisions like granny did". So let's lay the foundations.

- **Think about why you run a pantry, and go from there**: Do you want to save some money? Do you want to do less grocery shopping? Are you preparing for potential supply interruptions or temporary price spikes? Are you emergency prepping? Are you doomsday prepping? These things influence what makes the most sense to stock up on in your pantry. If you are very clear about why, how and for what purpose you want to run your private little pantry, you will run it with just as much clarity.
  For example: If you seriously want to prepare for major disruptions or even doomsday prepping, water is a serious issue. In that case dry food with a long shelf life sounds good as it will last you for a long while, but rice, dry legumes, pasta or texturized plant protein require a lot of water to prepare them. If you do not have access to enough clean water for cooking, those dried beans are not doing you any good. Or, in another scenario, if you just want to save some money and have a nice cushion for a month or three, then shelf life doesn't really matter at all as long as it's shelf-stable food, because most shelf-stable food lasts that long or way longer if properly stored (with very few exceptions to be aware of).
- **Take a deep breath and calm down**: When making decisions about your pantry and general storage, but also and especially emergency supplies, it is easy to let your thoughts and fears run wild. And if you consume too much information about emergency preparedness, especially from the doomsday prepper side of the internet, it is easy to lose sight of your actual pantry & preparedness goals. It is good to be well informed, and yes, you can also get lots of useful ideas, even for just neat little everyday life hacks, from the doomsday prepper side of the internet (or IRL). But for most of us, that's not why we run our private little pantry and have some emergency supplies in storage. If you start thinking like a doomsday prepper, you are messing up your pantry plans if all you want is just to save some time, money, and have an easier life with maybe 1-2 months of a cushion for the hiccups of life.
  Don't do your pantry & general preparedness because you are afraid. Do it because you like to be organized, save money, and have extra peace of mind. The more you make decisions out of anxiety or panic, the more your pantry and stash of supplies will be a costly mess – not just monetarily, but also for your nerves.
- **Be aware of your risk profile**: This does not merely mean not getting things you or someone in your family might be allergic to (or at least not for them). It mostly comes down to your real capabilities and needs, and the risks of the area you live in. If you want to run your pantry and general supplies not just to save some money and have a general little cushion, structuring your pantry & storage plans also around the real risks of your region and your and your family's needs and conditions is critically important. Examples:

    - Are you, or someone in your family disabled or has some kind of special needs? Then you have to structure your pantry and emergency supplies entirely differently than if you are a single, healthy, physically fit individual running a small household just for yourself.
    - Do you live in an area where droughts or disruptions of the municipal water supply can be a real problem? Then your risk profile is different from one where floods are a real concern, or one of getting snowed in, or where power outages are more common or at least a real possibility.
    - Are you not willing to "take the risk" of home canning of food, even though the risks if done properly are very small, yet beyond your personal risk tolerance? Or simply beyond what you are willing to do in terms of time and effort? Then don't bother with getting the supplies for home canning, no matter how much others might rave about how great it is. Stick with those canned goods from the supermarket.
- **Don't focus too much on shelf-life as long as it's shelf-stable**: I mention typical shelf life for items in the later sections, but in a well-run pantry few things ever sit on a shelf for more than a few months, at most a year. Anything well beyond 12-18 months of food in your pantry (if not even less) is already getting into very serious prepping territory (see also below about tiers of preparedness). Don't expect full nutritional value or taste beyond 1-2 years. Long shelf life is still helpful, because usually it means the food stays aromatic longer and more easily. Nonetheless, focus primarily on what you really like, eat, and need, not on "but it lasts 20 years!" If ready-peeled nuts & seeds and dried fruits are an important part of your daily eating habits, with a shelf life of 6-18+ months, then they are more important for your pantry than a bag of dry beans with decades of shelf life that you absolutely do not like and are never going to use in your weekly or monthly meal rotation, so you just end up throwing or giving them away eventually.
- **Tiers of pantry preparedness**: Understand what needs you have, and what you want to see covered with your pantry and other supplies. If you start, go one step at a time rather than overwhelming yourself and your wallet. The following tiers are nothing official, but general brackets I have developed for myself and others over time, based on what purposes they serve. Others have done similar with similar timeframes and reasoning behind those.
    - The "**tier zero**" is having enough portable water for at least 72 hours (as per recommendation in the US) and food for a week or two, or both water and shelf-stable food that requires no cooking for 10-14 days (recommendation in many other places of the world). Personally I consider 72 hours not enough if you really want to be prepared for emergencies, and no, not because I'm European and 72 hours is below typical recommendations in Europe: It's because if you think things through and look at what actually happened after real natural disasters, 72 hours often isn't enough. If you have a suitable source of water and means to filter and disinfect it (see below under "General Preparedness" -> "Clean water"), you can of course reduce the amount of water you store, just as our ancestors relied on their wells, cisterns, and rivers for that, not water tanks. I cover more about water further below.

- **Tier 1** is getting things together so that you will have a supply of food and maybe to a degree water (and/or water purification & disinfection), and everything else you might need to get you through 2-4 weeks. That is the usual maximum time a “normal” larger natural disaster can cause interruptions with the supply chain, or how long you might be so ill or injured that you'll be glad if you don’t have to go shopping. In one go this prevents you from running out of most things during everyday life, which can be annoying, frustrating, and can get more expensive to cover quickly. Price spikes are usually not easily cushioned at this tier, nor are more serious economic hiccups you might go through.
- **Tier 2**, if you want to, is enough to last you 1-3 months or a bit more. This is the typical length of some really bad supply chain hiccups, or massive disruptions caused by major disasters. It also covers a grace period if (brief) price spikes happen, literally buying you time when things are cheaper and readily available, to then recalibrate or just weather those times, while hoping they will resolve before you run out of your stockpile. This is also the typical “granny pantry”, potentially enough to last you up to one season = winter (3-4 months).
  At this tier and the next I’m also mostly just talking about food and general supplies, not anymore about water beyond maybe filtration & disinfection methods, if you have some natural, reliable source of water in reach. It’s not feasible to store enough water for human needs for many months, unless you have massive amounts of storage space. Typical calculations go by at least 1, better 2 gallons of water per person per day. That means for 3 months a person needs 90-180 gallons – that’s 2-4 typical rain barrels (50 gallons each) of water per person! And you would have to replace the water frequently enough to be safe, like using it for your backyard and rotating it regularly. That level of water storage is beyond the scope of running a private pantry and general preparedness, and also beyond the scope of this document.
- **Tier 3**: Lastly and if you want to, you can keep increasing your pantry and/or other stockpiles you deem important enough to cover 6-12 months, or maybe a bit more (anything beyond that goes into massive prepper levels I won’t cover in this document). This would be a <u>massive</u> pantry, close to prepper levels.
  Note that tier 3 does not necessarily mean having everything you would consume for 6-12 months, it can also mean just having enough food to feed yourself at tier 1 or tier 2 levels, but stocking more of certain things you really love, with low storage volume, cheaper if bought in bulk, and/or because you want to have a buffer against price spikes and supply disruptions until they are over. It also serves as a buffer for general inflation, personal economic troubles, and a very strong buffer for most potential disasters.
  In this tier, focus first on often-used things with a really long shelf life and low storage volume that are also cheaper if you buy bulk (or you happen to get on sale), and on things with a decently long storage life (6 or better 12+ months). Focus on things that either offer great nutritional value with long shelf life, or which you really love and would hate to be without, no matter whether your favorite chocolate, nuts, or spices.

With 6-12 months supply in storage of most important or beloved items, you weather things like bad-harvest price spikes in the main producer region until the next harvest is in (especially with a year's worth in your storage) or supply disruptions until supply chains adjust (and often: the panic-buying subsides) – others pay more, you got yours when it was cheap(er).
Additionally with this “tier 3”, especially if it is enough for close to a year or a bit more, you have a very large margin if general inflation spikes hit or stagflation hits, or if other unforeseen economic trouble hits your family that cannot easily be sorted out within just a month or three. This “tier 3” pantry gives you a very large cushion to keep feeding yourself and your family, while hoping that by the time your supplies dwindle, wages will have caught up, or otherwise you can recalibrate during that time.

- **Get what you use, use what you get**: Focus first and foremost on the things you really like and use anyway, everything else is secondary if relevant at all. Use what you get, so that you throw away as little as possible eventually. Instead of truly “stockpiling” and then forgetting about it, you simply rotate the things you get, eating and using the older ones and placing the newer ones in your pantry and storage.
  If you have not eaten or used something in the last couple of months, nor been likely to use it (unless you never tried it yet), most likely you won’t in the future, either, so don’t waste money on it for your pantry or rotating supplies. Exceptions to this rule are of course things rarely needed or used, but very much so when you really need them – less so for your pantry, but regarding things like tools, and non-food supplies like anything from nails to epoxy glue to cat litter even if you don’t have a cat (why cat litter? You can find out in the “General Preparedness" section).
  People with misplaced prepper ideas or worse, with hoarder mentality, make the mistake of storing giant amounts of things they never really use, and end up tossing a lot away eventually – that's wasteful. Storing things "in case of crisis" you hate to eat or can use will make you miserable when you can least afford it: when things don’t go as usual, and you need more peace of mind and ease of life, not less, and yes, also need good food for body and soul, not worse.
- **Don’t get lots of a few things, get lots of different things**: You will get sick and tired of eating the same few things over and over, like just beans with rice and rice with beans, or for a change, pasta with lentils or lentils with pasta.
  Screw the 100-pound bag of rice unless you feed a giant family, genuinely eat 2 pounds of rice per day and want to have a “tier 3” stash of rice for a full year, or are a doomsday prepper. Instead get 5 or 10 pounds of 10-20 different types of shelf-stable food you like and that can be used for many different recipes, like: different types of legumes, pasta, rice, other pseudo-grains, oatmeal, potato flakes; powder, pureed tomatoes, dried & canned veggies & fruits, condensed milk; milk powder, canned fish / meat and/or texturized plant protein; together with bouillon cubes / powder, cooking oil; and a selection of spice & herbs and other seasonings. That’s how you have a pantry which can feed you with great variety for a good while.
  You can then also figure out lots of additional recipes from what you have in your pantry with your core ingredients and just different seasoning and preparation methods.

- **Don't try to get it all at once, pace yourself**. Get a little extra, especially when something is on sale, so you build your pantry and provisions steadily and calmly. One step at a time, you build your personal margin in your pantry, and with it you build peace of mind when there are hiccups in life. Just get one or three extra here, another one or a few there at each shopping trip, depending on how much you can easily afford without breaking the bank or making your wallet cry more than it already does.
  Going slow eases the strain on your wallet while you build your pantry. Once it is in the state you want it to be, it's just the normal replacement cycle, and your pantry will not cost you more than your normal grocery bill. If you plan, organize and keep maintaining your pantry well, it will most likely cost you noticeably less – only badly run ones cost you more.
  By getting those extra items that go into your pantry (and other supplies storage) when they are on sale or you have a chance to get something for free or cheaply (like tools or other things from thrift stores and garage sales, or food for home canning / freezing when its harvest season, they're on sale and so on), you are also saving real money with that, compared to just normal weekly shopping. The 5% here, 10% there add up over time, together with sometimes even maybe 20-50% less you pay for your food and other things if you plan things well with your pantry and storage space.
  Remember, be careful about buying bulk: Sometimes that can be cheaper, sometimes more expensive, and if you don't use most of that bulk before it goes bad, it's way more expensive. Calculate by price per pound, for some things also price per gram of protein or other nutrients, and you get the best bang for your buck.
  Also, start small with the pantry and extra supplies you are getting and then rotating. If you realize that running your private little pantry & supplies storage feels like a giant hassle, is overwhelming, or otherwise not something you want or can do, then simply stop and either go back to your previous way of doing things, or maybe take your plans and expectations down a few notches, like going from tier 2 level of pantry plans to tier 1 or even just tier zero. Starting small and building upward lets you get a feel for what works for you and what doesn't, before you commit too much time and money. It's a lot easier and cheaper to scale back from tier 1 than if you already spent a lot to quickly reach tier 2 or tier 3, and then find yourself overwhelmed by managing and organizing all that extra stuff, and racing to use it up before it goes bad.
- **You cannot rush or shortcut**: Not learning, not turning information into genuine, applicable knowledge, and not if you want to avoid costly mistakes building your pantry and supplies if you have never done so before. So don't rely on those quick, short videos, or those quick posts on social media. They can give you ideas, but not the kind of depth and width of understanding you will need for really good storage practices, organizational practices, home cooking, and certainly not methods of food preservation like home canning, drying, and so on.
  If you truly understand how and why methods work, you can do them safely and effectively. If you just follow a quick "recipe" without understanding the principles behind it, there is a real chance you will mess up. The results of such mess-ups can range from just some food you have to throw away, or money wasted on supplies you'll never use, to a severe case of botulism that sends you to the ER – or the graveyard.

- I've said it before, but cannot emphasize enough, **pace yourself**. If you never did any of these things, you need to build not just knowledge, but also experience, so that you know what works and doesn't, for you and for your real living conditions. Even if you would go to an intense workshop on all the things I mention or describe here, lasting a full week, you would come home and most likely still mess some things up, because you lack the practiced experience, and might forget important steps.
  Running a well-stocked, well-organized pantry and other home supplies (and general preparedness practices) also is to a large degree a matter of habits, of how you organize your life, and changing such takes time: If you practice something every day for at least 30–60 days, a habit starts forming that you will eventually practice automatically.. If it is something you don't do daily, it takes longer. After a year or two of running your own private pantry, rotating household supplies, and practicing general preparedness, it will most likely become so ingrained in you that you barely even have to think anymore about what you do with this new habit.
- **Be realistic about what you do and won't or can't do**: If you do not like cooking, or are concerned about electricity going down without you having enough resources to cook without electricity, then getting dried beans, which require a lot of time for soaking and cooking, is unrealistic, and you end up with bags of beans taking up storage space until you throw them away, leading to wasted money and beans.
  If you suck at DIY, or just don't like it, or don't have the time for such, don't bother with the parts I list further down about such things, they would just take up shelf space, gathering dust. If you have any disabilities that prevent you from doing certain things, don't get the stuff involved (like if you can't operate a typical manual can opener and no one's around to do it for you, there's no point having one, and better to get one that can be used by you on your own, like a battery-powered can opener).
  I could continue the list, but you get the idea. Be realistic about your own capabilities and tendencies, and work from there, not based on some fantasy-you that does not exist, unless you want to truly commit to building toward becoming that version of yourself through changing your habits, likes, and potentially also capabilities if possible. Start small with such an attempt, lest you overwhelm yourself, or find out that being that fantasy-you isn't as cool and fun as you thought.
  If you are just getting started, don't overwhelm yourself. Try things out one at a time. Don't try to get into home cooking and home canning and flour grinding and maybe even gardening all at once, you will overwhelm yourself and potentially your wallet. Get the tools and knowledge for one thing you haven't done before, try it out, get a feeling for it, and if you like it, integrate it into your normal life (or file it away as "okay for emergency situations, but not everyday life). Otherwise stop and take it as a learning experience you are done with. After that you can try the next thing. And the next, one at a time, unless you really feel you can handle more than one at once.
  By doing it one step at a time when you have the time and resources to do so, you increase your peace of mind, your skills and knowledge, and can have fun while doing so, rather than scrambling in a panic if you ever suddenly need to know or have these things when resources, time and peace of mind are scarce.

- **Have your staple of simple, straightforward recipes**: Save the complex recipes for Thanksgiving, Christmas, and birthdays (or other times when you want to just have something a bit more special), or at least for those things you get fresh and use up fast – but those items are not a direct part of your pantry. If you have 1-2 dozen standard, nourishing recipes you know by heart, which do not require a lot of preparation and, and maybe can easily be varied with other things from your pantry, which you (and your family) like, you will eat them over and over happily.
  This is the secret of sandwiches, spaghetti bolognese or napoli, or most stews: They are tasty, easy, nourishing and sate you well, while requiring few ingredients. Figure out which recipes work for you and your family, and as you alternate mainly between them, you save yourself time, mental energy, most likely money, and your pantry becomes easier to manage.
  If you are just starting with building your personal pantry, maybe sit down with a notebook, figure out which recipes work for you, and write down the ingredients. Then write down all the ingredients from those recipes: That's your base pantry list, to be changed over time as you discover new recipes with pantry ingredients, and others might fall out of favor.
  The same principle applies if you practice, or get into little DIY things: Start small, figure out what things you might really have use for, and build your little stashes of tools and materials over time. If you haven't used something in a long time and it isn't part of your preparedness supplies, you probably don't need to keep it. Tools and repair materials of course are not used that often, but are really good to have when you need them, so keep that in mind when you decide what to get and what to keep.
- **Be aware of points of failure, and cover for them**: Points of failure are single events, circumstances, conditions, or mechanisms that can make your best-laid plans go sideways. If you are aware of potential points of failure, you can either negate them by shaping your plans around them, or at least greatly reduce the risk – that's risk reduction and risk management through buffering. Plan your pantry and other supplies accordingly depending on your goals, and you will be way more successful. That's of course also true for all things in life requiring some planning and organization – turns out, running a private pantry can train you in an important way of thinking. Examples:
  - If you are concerned about frequent power outages you can't cook without electricity, that is a point of failure in your pantry planning if you mostly stock up on things that require cooking. Stocking up more on things that can be eaten safely without heating them first mitigates this point of failure.
  - If you fill your pantry with canned food but have only one can opener and that one breaks, this is a point of failure. Get a spare can opener, and this point of failure is greatly diminished, because now two can openers would have to fail simultaneously for it to become a problem.
  - If you home-can food with only pasteurization and do not boil the food before consumption, that can become a rare but potentially catastrophic point of failure if the food has been contaminated with spores of Clostridium botulinum. You reduce the chance of said point of failure to occur literally to (toxicological) neutralization levels by boiling the food properly before consumption.

As a result, you have all but removed a potential catastrophic point of failure in your methods if compared to someone who uses a pressure canner, but doesn't practice "boil before eat" (to destroy the toxin causing botulism), because pressure cooking can fail without being noticeable, and thus ending up with just pasteurization and all its risks if skipping the "boil before eat" step.

    - If you live in a very moist and hot climate and you stock up on things very sensitive to such (like flour), you have a point of (relative) failure for your pantry supplies, of these items going bad much faster, even if you do your best to keep them in airtight containers. You can counter this via vacuum sealing, at least against the moisture, or even negate this potential point of failure by simply not stocking up a lot of such food items, and instead choosing other ones. That's why you find flour less commonly used in traditional pantries and recipes in hot, moist regions than in moderate climates – humans in those regions learned what works and what does not, including the point of failure that is "humidity".

- **Have your pantry properly set up**: Everything you have more than one of and store in your pantry (and other relevant storage spaces), the oldest goes to the front to be used next, the newest goes to the rear (or top, in baskets and similar containers). This is minimal extra work but ensures things don't go bad because you accidentally forgot some old packages in the back while using newer ones. Spoilers: It will happen anyway, it even happens to the best of housekeepers ;^)
  If there is no best-before date printed on a container, write down and attach your own note with when you added it to the stockpile, what it is and when you canned it, refilled from from a bulk bag into smaller containers, or similar important info (in a way that can't come or wash off easily, but is still easy to remove if you want to reuse the container). With such labeling you keep a good sense of how old which container / item really is. If you store your food in more than one place, maybe also keep an inventory with items, amounts, best-before dates, and storage locations, so you don't forget.
  Keep your pantry as orderly as possible, otherwise you end up with things overlooked or forgotten, like your extra package of peanuts ending up forgotten between the rice & legumes, and by the time you realize it's there, those peanuts probably have gone rancid. Orderliness and cleanliness are truly next to godliness when it comes to running your private pantry. A clean, well-organized pantry where everything is stored in pest-resistant packages will attract much less pests, prevent food from getting forgotten and then spoiling, and it makes finding things easier.
  Also otherwise be aware of what storage space you have, including all those nooks and corners and unused space under shelves (where it is often cooler than in the rest of the room) and between them, plus using hooks on shelves, ceiling, doors, you name it, as long as you don't lose track of what you store where with what system. With the right containers and methods you can get a lot of extra storage space out of the space you have. I call that "home tetris" or "apartment tetris" ;^)
- **Periodically check on things as needed**: For the most part you can easily do this periodic checking when you are rotating the new items to the rear / bottom, keeping the old in the front / top. Understand "use-by" vs "best-before" dates. Check for signs of spoilage, degraded containers, or other things to fix, and replace accordingly as needed.

There are also other things potentially in your general & preparedness supplies which benefit from this periodical “checkup”, like rechargeable batteries, the medicine cabinet / first aid kit, or even fuel containers. These need to be checked from time to time whether they are all still good, functional, not beyond their due date and so forth.
A good way to remind yourself is to check these things at least once if not twice a year when the clocks change thanks to that pesky daylight saving time most of us don’t like. Another good way, if you practice such things, is to tie it to your habitual spring cleaning or getting the house and property ready for winter, just like our great-grannies did. If you don’t do those things, but have anything else as a fairly regular yearly or twice-yearly event for you, like yearly checkup at the dentist, you can make those your reminder to check your supplies for potential replacements.

- **Be smart about storage space use**: If you do not have the space for something to reasonably store it, of course don’t get it. Sure, it would be nice to have those 5 large canisters of extra fuel for your car, to be filled when fuel is particularly cheap. But if you can’t safely store them without a fire hazard, or vapors potentially leaking out (they almost always do) and creeping through the plastic containers of your food nearby, then you have no suitable space for them and can’t store them and thus it’s counterproductive to get them.
  Same with that cheap 50-pound bag of rice, which has a long shelf life of potentially even decades. If you do not have the space to store it properly, it doesn’t matter that it cost you half the normal price per pound: You have a giant bag of rice now sitting in your living room or wherever, under poor storage conditions, and thus not just likely spoiling soon or getting contaminated by pests, it’s also an annoyance to work around. Build a pantry & supplies, not clutter & hoarding!
  I will also give you some ideas on how to be creative with storage space further down under “About Storage”.
- Have **a good sense of how much you really use, its shelf life, and prices**. Don’t get way more than you could ever need and/or use up in time, or needlessly buy when prices are higher than normal, or buy in bulk when it turns out to be more expensive if you calc per pound, and thus wasting money and / or valuable storage space.
  Example: Depending on individual usage and the type of toilet paper, most people go through 1-2 rolls every week to just 1 roll every 2 weeks (unless you use – pun intended – the crappiest toilet paper, or are insanely wasteful: you don’t need tons of it per normal wipe). So if you want to have enough for 3 months (!), you don't need 100 rolls of toilet paper taking up a giant amount of storage space, you will need about 3 months x 4 weeks = 12 weeks x 1-2 rolls = 12-24 rolls for 12 weeks.
  Similarly, if you know you use about 1kg of rice per month, then it makes no sense to store 100kg of rice and take up valuable storage space. Rice is a different story: It can last decades if properly stored, and takes up far less space than toilet paper. If you have the storage space and use around 1kg per month, a 10kg bag (roughly 10 months’ worth) or even a 25kg bag (about 2 years’ worth) will be significantly cheaper per kg than those little 500g bags. Refill it into smaller, airtight containers, store it dry and dark, and you have a very hefty rice margin with minimal extra work, and very real savings over time.

Doing the same with a big bag of fresh potatoes worth a year of potatoes going by your average consumption rate? Those need to be stored cool (but not refrigerated), dark, and well ventilated, frequently checked for spoilage, and then can stay good under the best conditions for a few months at most, likely less. Great, your big supply of potatoes takes up a lot of storage space, requires extra work to maintain, and a good chunk will most likely end up as trash or if you have it, on your compost heap, unless you turn them into preserves. It would have been cheaper and easier to buy smaller bags over time, and if you want to stockpile “potato-things”, get a big bag of 100% pure potato powder for your stash, or (home-)canned potatoes.

- Have a **good sense of what is long-lasting or not**, and **how you detect spoilage** – there is a lot about that online, and I will mention a lot of typical signs over and over, but by all means please read up on it more if you need to. No need to give yourself or others a bad time in the bathroom or at worst a trip to the ER, because you couldn’t recognize that the oil or fruits or grain whatever you used had gone bad, but also no need to throw away perfectly fine food and other items that are still good to use.
  Example: Toilet paper, properly stored, doesn't go bad. Detergents, soap, and similar things stay good for many years if not decades. Medicine has a very limited shelf life, but some just reduce in strength and can in a pinch still be used (afaik e.g. ibuprofen, but don’t quote me on that) while other medications can become dangerous to use soon after their expiry date, like e.g. the coating on pills with extended-release effect can break down, releasing the full, potentially dangerous dose all at once.
  Rice and most dry legumes, if properly stored, can last decades or more. Honey can have near infinite shelf life. Shelf-stable milk depending also on the container can be good for only a few months, maybe even a year or two – everything after that is stretching it and increasing risks. Also be aware of how you detect spoilage, including how some signs of whatever you got gone bad are easy to detect while others not, so be careful with, but not needlessly paranoid, either – being informed prevents both carelessness and paranoia.
  Even for things in your fridge, learn what stays good for quite a while beyond best-before date, like: Plain yogurt in unopened, refrigerated packages can stay good for weeks or even months beyond its best-before date, and spoilage can usually be detected easily, while fresh meat and fish are very risky business even just a couple of days beyond their date, and spoilage is not always as easy to detect.
  Inform yourself, it will also save you a lot of money over the years by not throwing things away that are perfectly fine long after their best-before date, while saving you from some very unpleasant experiences that even people who always just go by the best-before date can have, if they miss the signs of unexpected spoilage.
  Don’t hoard things for too long. Rotate food before its nutritional value and taste degrade too much, which usually means within 1-2, at best 3-5 years, with few exceptions.
- **Learn a bit about nutrition**. This is not just good for your health, it is important if you want to be well provisioned for a longer time than at most a few weeks from your stockpiles. Understand how a good, nourishing meal can easily be tossed together. There is tons of information online about that, and I will mention a few principles later throughout the text, too.

Understand that good provisioning is not about living off rice, legumes and canned meat alone – you would go nuts and experience appetite fatigue very fast. One can eat very well and with great variety for a long time with the right of supplies at hand, and they don't have to be that many or that costly.

- **Learn the basics of how to cook**. It will save you a lot of money over the years, and there are many ways you can make a wide variety of simple, easy yet nourishing and satisfying meals with minimal effort – some meals as easily and quickly tossed together as 5-10 minutes, from many of the things you can store in your pantry. It is not as boring or unhealthy as you might think, you can even do it while watching a show on the side, listening to a podcast or whatever else. If you ever encounter "life hiccups" (even if just being sick), being able to toss together a tasty, nourishing meal from a few simple ingredients will be of course also helpful.
  Also if you want to save money, be realistic with what you really use. Many amazing but fancy recipes require special ingredients. You then make one meal, and if you got more than needed for that one meal, the rest now sits in your storage and quietly turns into compost. Why bother? The variety of nourishing, satisfying meals you can make from the pantry ingredients I'll be listing later is broad enough that you can skip the "rarely used ingredients" problem entirely.
  Focus on those you like and use often, add maybe a few extras with a long shelf life that you use less often, and call it a day. Unless of course you are an avid cook and love to make a great many things which require special ingredients, and you use them up then anyway most likely, or don't mind the occasional one going to waste.
  Once you have your basics in your pantry, you can look up online what other things you might be able to make from those basic ingredients. You might be surprised how many different meals you can make from just a couple of staples plus seasoning.
  Advice for Beginners: Teaspoons, tablespoons, cups and so forth are measurements of volume. How much of each of them is in the other, and how much that translates to in weight measures like grams (or imperial ounces / pounds) for common ingredients, can be incredibly confusing for the newbie, and that's okay. If you are not familiar with them yet, write them down, like "X grams of [ingredient Y] = one [measurement Z]" for all the ingredients you commonly use. Then tape that cheat sheet to the inside of a cupboard in your kitchen, maybe where you keep your measuring containers and kitchen scales. Now your cheat sheet tells you things like "1 Tablespoon = 3 Teaspoons" and "1 Teaspoon = 6g Salt", and you can calc that 1 Tablespoon is 3 Teaspoons x 6g Salt = 18g Salt. If math is really not your thing (no shame in that!), just keep a cheap little pocket calculator in the same cupboard.
- **Learn a bit about how to store things properly**, including without refrigeration. Again, there are lots of videos or articles you can read online, specifically for the things <u>you</u> want to keep in your pantry. A basic understanding of how to keep your dry goods good not just for months but for years, your cooking oil not just for weeks but for months to years, helps keep them more aromatic in everyday life, and can be very useful if your fridge ever breaks down, and certainly when it comes to running a little personal pantry with no need for refrigeration if there is ever a major hiccup with your electricity or fridge.

- **Be thrifty but not stingy. Be creative**. There are certain ways of getting and storing your food & other supplies properly that are dirt-cheap, and others that are penny-wise but pound-foolish. Why buy expensive food containers if the glass jar that came with your store-bought canned food, and once you've eaten the contents, can be thoroughly cleaned, aired out, and reused as an airtight jar in your pantry or you can even reuse to make home-canned food if you want to! Learn to reuse, from rubber bands and plastic bags to glass jars and storage boxes (e.g. my basement is very neat and orderly at zero cost, thanks to reused old delivery boxes; those things are amazingly sturdy ;^). On the other hand buying cheap metal boxes with lids through which pests can actually crawl end up as only good to store non-food items, and probably spoiled food as the price to discover this.
  If you can, buy the things you need when they are on sale, check whether bulk is really cheaper or not (sometimes bigger bags are actually more expensive per pound of content!), and stick with good but cheaper store brands – often the contents are exactly the same (at times even from the same manufacturer, just different packaging!) as the more expensive brands where you pay extra for the name and fancy packaging.
  For non-food items, also check thrift and second hand stores / garage sales and flea markets if available, and whether things are genuinely on sale (and not the "we quietly raised prices last month so it looks like a sale now" trick). Sometimes you can get real bargains that way, if you have some good awareness about prices and quality. Also have or develop a sense of what is good quality and what is "Temu-level trash" (online resources can help to inform yourself).
  This attitude will save you a lot of money over time, one small amount after another that adds up, sometimes even hefty amounts right away. It also develops a way of thinking that pays off when things suddenly go sideways or get less convenient than usual.
  You've already learned how to reuse, recycle, repurpose, improvise, and you know how to source things from more than one place: Not just the local store or that online store starting with "A", but also thrift shops, markets, local producers etc.
  Don't needlessly waste money on "emergency food supplies" and other fancy prepper stuff sold with much hype (and often fear-mongering) by some companies: It tends to be overpriced, and you probably won't even like / use some of it. You can simply and more cheaply rotate normal, good food in your pantry worth 1-3 to 6-18 months, with better nutritional value and quality of life for your money.
- **Planning ahead saves you a lot of planning and more**. Buying when cheap, buying in bulk when it makes sense, buying secondhand, and learning to reuse things – all this makes your money go further and thus worry a bit less about money. Good margins in your supplies mean less or no scrambling when things go wrong. Fewer shopping trips mean less time and fuel spent. These things add up quietly, one small bit at a time that saves you far more than a dime.
  One grain of preparation and prevention easily saves ten tons of scrambling, panic, and sometimes a hefty amount of money in times of need. So don't go overboard with anything, rather look at things as margins you build, as little insurance policies for the unexpected to be expected in life, and as ways to save money and gain peace of mind.

About Storage

You will hear me over and over say “dry, dark, cool, airtight”, which is the most common rule for pantry food storage and most other types of food as well, with very few exceptions for some specific types of food. Note that not everything stores well in the fridge or freezer, but some things absolutely belong there, or stay fresh longer there. I will usually note things accordingly, otherwise look things up yourself – there is plenty of information available online, and you can even prompt AI to help you collect information to read up on. Just don’t count on AI to do the reading for you, as they can hallucinate, and even give you dangerously false information!

Creative Storage Use

If you are limited with space (like living in a small apartment), or just don't want to dedicate much of your larger home to your pantry and supply needs: Get creative, you might be surprised how much unused space you can find and utilize if you play a bit of what I jokingly call "apartment tetris" or "home tetris".

For example: Many of us have shelves, beds, couches, and coffee tables with potentially empty **space underneath**: This area is often the coolest spot in your home, and with the right containers or packages it's perfect to stash pantry food there. If it feels like a hassle to slide things under and out of them, get storage containers on little wheels (the kind made for under beds), or glue or screw wheels or casters under a wooden board on which you place those storage containers, or alternatively, use little furniture gliders – the kind with one smooth plastic side for gliding over carpet – outfitted with grip strips on top to hold storage containers, while the felt-covered other side glides well over hard floors.

You can even make **furniture that is actually storage**: Just get a few sturdy boxes of the right size and shape to stack well together, fill them with supplies you don't need to access as often (otherwise it might get annoying), put a wooden board on top, and if the boxes are not that pretty also a tablecloth: There is your coffee or dining table, made from storage containers plus a wooden board you can paint whatever color you like. If you want to make it extra secure, simply glue or screw a strip of wood underneath the wooden board, and wedge that strip of wood into the gap you leave open between two of the storage boxes: Now that wooden board won’t as easily slide around anymore.

Top of shelves: Just get some pretty baskets or boxes (thrift stores and flea markets say hi, as do the relevant secondhand websites), or simply wrap an old pillowcase around that "ugly" bag of food, toilet paper, or whatever, and place it on top of that (stable enough!) shelf, and you just unlocked extra storage space in your home. Keep more lightweight things on top of shelves, lest they become dangerously top-heavy (heavy things on lower shelves).
Be aware that up on shelves it tends to be a bit warmer, so it's better for things that don't mind the warmth, or actually like it, and are more lightweight for your handling purposes – great for toilet paper, paper tissues and towels, and extra supplies of anything from old fabrics to non-food odds & ends,or that extra-large mylar bag of lightweight, dry texturized plant protein or potato powder – which should be okay as long as it's only a few degrees warmer.

Other lightweight items too, like spare blankets, extra bedding, and not-too-heavy repair and DIY supplies, can be stored well on top shelves, making room lower down for heavier things or those that prefer it a little bit cooler. Just don't overburden the tops of shelves, as it could make the entire shelf less stable, and keep heavy things on the bottom for more stability.

Those **hooks you can hang from doors**? You can use them to hang bags, which can store a surprising amount. If you don't like it visually, just hang your coats and jackets over it so the bags are less visible, and in one you've now also gained a spot for your outerwear. Those shoe holders you can hang from doors are also great for storing not just shoes – all kinds of odds and ends can be kept at hand in those compartments.

If you look around your home with this new lens – and I've only given you a few of many potential options here – you might be surprised how many nooks, crannies, and spaces you are not using yet, but could without making your home look cluttered, cramped, or plain ugly. In doing so, you also develop your (perhaps newfound) creative and problem-solving capabilities. It is amazing what one can do with just a bit of fabric, wood, wire, string, and glue, plus containers like baskets, boxes, and bags, and maybe a bit of paint.
As my mom used to say, "Let's put a board on it! :D " and ooh boy did the DIY store know her well, and did we have a lot of creatively made, highly useful yet beautiful furniture and storage, all made from just these few basic materials, while living in a beautiful, uncluttered, well-decorated home that could have been on the cover of "Homes & Gardens".

Sources of spoiling

Let's begin with a general rundown about what really needs to be managed in your pantry. The typical **"food destroyers"** are

- **contamination** (bacteria,mold and their byproducts, and of course chemicals),
- **oxidation** (contact with air),
- **moisture** (mostly also through contact with air),
- **light** (can cause certain chemical processes) and
- **pests** (moths, bugs, mice etc.).

That's why "dry, airtight, dark, and cool" is the standard approach for most dry, non-refrigerated types of food to maximize shelf life, achieved in a variety of ways. Avoiding contamination and pests matters most, usually followed for most pantry food then by "dry and airtight", and for some (usually with higher fat content or other things sensitive to such), " dark & not too warm".

For some types of food, different rules apply, although they are usually anyway not shelf-stable, or only in specific ways. For example: Cheese needs to "breathe" for best aroma, so keeping it in airtight containers can cause mold to develop faster, or it otherwise to go bad. Letting it sit openly can make it dry out. That's why wrapping it in cheese paper is common. Or: Some types of bread can stay fresh longer in the fridge, but their taste and texture can suffer, while other types are not affected negatively at all. This is why having a good grasp of "what which food really needs" matters, even though it's more about knowing the exceptions to the rule than memorizing a specific rule for every type of food.

- **Contamination** with mold (fungi) and bacteria as well as chemicals you keep at bay by cleanliness and general good practices. To avoid any contamination of food with them: Don't lick the spoon and put it back into a container, or use it across different types of food and containers. Don’t leave containers open longer than needed. Don't let insects land on food or get inside containers. Don’t handle food for storage with unwashed hands. And so forth, you get the idea. It is not about being perfectly sterile, your food almost always contains microbes anyway (or even has to!) unless it has been sterilized. These practices are about reducing the number of microbes getting onto and into your food, and thus the speed with which it might spoil.
  “Store cool" even for shelf-stable dry food in your pantry is also a common advice to slow the rate at which potential microorganisms multiply, although this is usually more of an issue with food that is not thoroughly dry (and thus usually not shelf-stable), and thus managed with refrigeration as needed.
  In thoroughly dry food, microorganisms usually have little chance to grow, as they tend to need moisture. This is the reason why drying food is a good way of food preservation, and why most dry foods are shelf-stable, while moister ones usually are not, unless sufficiently preserved by other means, like preserving agents (salt, vinegar, etc.), canning, or pickling; contamination with pathogens can still be an issue, though.
- **Oxidation** is all about air getting to your food and starting chemical processes that change aroma, texture, nutritious value, and eventually can make it too unpleasant or even unhealthy to eat. That's one reason why airtight containers are so important for many types of food, or why vacuum-sealing is even used on dry food. The other two reasons are reducing the chances of microbes contaminating it, or moisture getting to it. Oxidation is one more reason why you should not leave food containers open longer than needed, as more oxygen can keep getting in and reacting.
  Besides properly managed airtight containers you can also consider using food-grade oxygen absorbers: These are little packets you can add to your containers of dry food, and they will absorb part of the oxygen from the air inside the container. Note that these should only be used with dry food, and even then not all types of dry food. Inform yourself for what types of food they can be used with and what not, if interested. Personally, I consider these unnecessary in a normal household pantry where food rarely sits around for more than a few months to a year or two at most before it gets consumed. These oxygen absorbers have a limited amount of oxygen they can absorb, so if you use them in containers you open and close more often, you will need to replace the absorber packets eventually, and in most cases the cost of these packets versus what you might lose in food to oxidation over the years may not justify the expense.
- **Moisture** is usually a two-fold issue for food and shelf life. For one, and as mentioned, most microorganisms like bacteria and fungi (mold) need a certain degree of moisture to multiply and ruin your food. Secondly, moisture can trigger a variety of chemical processes – whether directly through the water itself, or through other chemicals often present in the air that get in along with the moisture (besides oxygen). Airtight containers are once more the easiest way to reduce how much moisture gets to your food, with vacuum-sealing in plastic also effective, of course (until you have to open the package). Depending on how long you might store things in a container / care about food quality

Long term, you can also consider getting some food-grade moisture absorbers: These are little packets you can add to your food containers, and they will absorb most of the moisture faster than most types of food do. Be aware, though, that some types of food will still absorb a good chunk of moisture from the air getting into the container, moisture absorber in there or not.

As moisture absorbers become saturated, they have to be replaced. Some of these little packets can be dried out again in the oven or microwave (and some get damaged by that process, leaving you with a mess in your oven or microwave). Sooner or later though they have to be replaced. Whether the extra cost for moisture absorbers is really worth it depends on your preferences, how fast you use up your supplies, and your general practices. Unless you are really doing long-term storage, though, in my personal experience it's hardly worth the price, with few exceptions.

A simple homemade version of such moisture absorbers can be as simple as adding a sugar cube, a bit of salt, or a few grains of rice (if needed, in a clean, food-grade sachet) to the container on top of the food you want to store as dry as possible. Salt, sugar and rice, if bone-dry, are prone to absorbing moisture, and thus keep at least some of the moisture away from the main food in the container. Don't expect miracles from this, but it can help a bit, until eventually the rice, salt, or sugar cube has become so saturated with moisture that it no longer works for this purpose.

The trick with rice works very well also in salt shakers: Simply add a few grains of rice to your salt shaker, and the salt in it will clump together much less, as long as you replace the rice from time to time. Only use plain white rice for this, as wholegrain rice can go rancid faster, and then transfer that icky taste to the salt.

- **Light** can be relatively harmless to some types of food, while causing chemical processes in others, and in some cases also encouraging biological processes that need light to grow faster, like your fresh onions sprouting, or at worst your fresh potatoes not just sprouting but also producing solanine as they go green. Most food can lose color over time if exposed to light for many years, but that alone is usually harmless. Instead of memorizing what food might or might not be negatively affected by light, you can simply follow the general rule that everything is best stored dark, unless specifically mentioned otherwise.

  This does not mean things need to be pitch black, but if you have see-through containers stored in a room with light for most of the day, keep them at least in boxes or baskets where only very little light can reach the food. If it is an open box or basket you can simply put a kitchen towel or some other fabric over the box or basket and the containers inside, that's usually enough. Your fridge and freezer are dark by default anyway, so that's a non-issue – nor do things usually stay in the fridge long enough for light to really become one.
- **Warmth / Heat**: Sufficient temperatures can enable or enhance certain chemical processes or microbial activity – what counts as "sufficient" depends on the food, microbes and other factors. Freezing puts a total pause on the latter and stops most of the former, but can introduce its own changes to food, like freezer burn, unpleasant drying, changes in texture, destruction of cell structures, and so forth, depending on the food and time involved.

Shelf-stable food is food that can be safely stored at room temperature in a proper container. Usually this is very dry food, or food that has been treated to become shelf stable, like through canning (which is pasteurization or sterilization combined with vacuum sealing).
If very dry food comes in contact with the moisture in the air though, it slowly stops being very dry and thus becomes less and less shelf-stable: Microbial activity and other chemical processes can get going again at room temperature, given that most microbes need enough – but not too much – warmth and moisture.
Any food that is not shelf-stable belongs in the fridge or the freezer – period, end of discussion, no exceptions (or only with very special storage methods I won't discuss here). This is not just relevant for matters of general storage: Some food, under the perfectly wrong conditions, can go bad within just 2+ hours, like boiled rice as a surprisingly common source of food poisoning. Cooked potatoes and pasta also can go bad faster than many realize. It is rare, but there is a non-zero chance.
WARNING: Do not leave non-shelf-stable food for long at room temperature when it is vacuum-sealed. If the food is low-acid, sufficiently moist, and now in the anaerobic environment created by vacuum sealing, a bacterium called Clostridium botulinum can become active within anything from a few days to just a few hours if it is present in the food or package. The toxin it produces can be lethal in nanogram quantities.
You will hear me mentioning Botulinum/-ism over and over again whenever it is relevant, because while most food storage issues are relatively easy to manage, harmless, or at worst not that serious if something goes wrong, that one can have lethal consequences for you or anyone else who eats such contaminated food. It is the one big nightmare for anyone who does food canning or otherwise digs deeper into food storage, even though in reality cases of botulism are extremely rare worldwide every year, and can usually be traced back to very specific mistakes or problematic practices.
So never leave vacuum-sealed, moist, low-acidic, non-shelf-stable food sitting around at room temperature longer than you absolutely have to. Vacuum-sealed food packages of that type belong in the freezer, or at most for a short time in the fridge, and even the fridge is a bit questionable in my opinion, for reasons I will get into below, including and most of all under "About Storage" -> "Vacuum Packaging". The same of course applies to vacuum-sealed but not sterilized canned food (real cans or glass jars), or pasteurized canned food without specific precautions, which are easy enough to take, but better not skipped.

- **Pests** are anything from moths, flies, cockroaches, and other bugs that love to eat or lay eggs in your food (and then their grubs eat from and poop in your food), to ants which can gnaw through even plastic bags and contaminate the food, to rodents like rats and mice, which can get through a lot of containers. I list pests last, but keeping them away from your food is first and foremost, and that's usually easily done with a few simple precautions.
  Some kinds of pests, most of all cockroaches, flies, rats, and mice, are also common vectors for microbes that can quickly spoil your food, or at worst contaminate it with pathogens that can make you very sick very fast. Even their pee and poop ending up in your food can carry such pathogens.

Airtight containers are again the main line of defense, but these containers have to be designed in a way these pests can't get in there. Rodents like mice and rats can chew through a lot, but glass, thicker metal containers and really sturdy plastic containers are usually beyond their scope, or not worth the effort, while thin plastic bags are a piece of cake for them, and even mylar bags don't stand a chance. The first line of defense against infestation with pests is no food sitting around in the open longer than needed, and general cleanliness in your home, plus taking the trash out frequently (and maybe quickly rinsing any empty food containers so that less food residue attracts pests with its scent).

Ants can, to a degree, also gnaw through thin enough plastic bags, so don't count on those as enough protection against these little industrial-level workers. They have surprised me more than once with what they can get through if they smell something tasty. Ants, moths and other smaller bugs can squeeze through surprisingly small openings, so airtight containers are essential also for that reason, or at least something that comes very close to airtight. Otherwise you might open a food container one day and be greeted by a horde of grubs, or wonder where suddenly all the moths and bugs come from, only to realize they hatched from the food in one of your not-really-airtight containers. Yes I speak from experience here. It's impressive and surprising what tiny gaps a determined moth mama looking for a place to lay her eggs can wiggle through…

At worst you can even buy food which, unknown to you, is already infested with insect eggs just waiting to hatch. Therefore, avoid mixing the contents of several freshly bought bags in one container. Wait and see if anything hatches in one of them – rare as that usually is.

It goes without saying that any food container that got infested by pests needs to be emptied: Toss the food away as it probably got contaminated, thoroughly clean the container with hot water and soap – and if you suspect contamination, also pasteurize or otherwise disinfect it (at least with vinegar or a food-grade disinfectant), and only after you are certain it's free of remaining contamination use it again. If you find ants, grubs, moths, or most types of small bugs (not cockroaches!) in a food container, thoroughly cleaning it with hot water and soap is usually enough. If rodents, cockroaches, or other known carriers of pathogens got into your food, cleaning and disinfecting the container is the bare minimum – after throwing away the food, of course. You might also decide to just toss the container as well, or that it's only safe for non-food storage at best anymore, especially if it involves nooks or lids where you cannot be certain they got properly disinfected. Often it's not worth the risk to keep using a container for food if you suspect it's contaminated beyond your ability to truly cleanse and disinfect it.

Dry food, wet food, shelf stable

For storing food, understand the following principles and terms, and always keep the following rules of thumb in mind, while exceptions exist, of course. To be clear about a term that is often used but sometimes misunderstood: shelf-stable food is, quote Wikipedia, "food of a type that can be safely stored at room temperature in a sealed container." (That is the standard definition).

- By default, only sufficiently **dry food** containing little to no water can be naturally shelf-stable at room temperature, as long as it is kept in an airtight container to keep air, moisture, pests and additional microbes out. These are the only types of food you can store at room temperature without much further treatment beyond that, and if not indicated otherwise.
- **Wet / moist food**, which is anything with enough moisture to enable microbial growth or fairly swift chemical processes that can cause spoilage, is not shelf-stable without special treatment to turn it shelf-stable. It belongs in the fridge if you plan to consume it within a few days, or a few weeks for some things, and up to a month or two for very few things. If it can be frozen and for anything stored more than a few days, it best goes in the freezer.
  Note: In the fridge, different types of wet food have different needs and behaviors when it comes to moisture and ventilation, and thus have preferred spots in the fridge (which usually has a vertical temperature gradient and other relevant gradients), or in how they interact with other types of food. Learn about these and keep them in mind to prolong shelf life in the fridge. I will mention a few such examples later.
- The most common way to turn moist food shelf-stable is **pasteurizing or sterilizing** through heat, and from there on keeping all potential microbial contamination away from the container, as well as preventing new entry of air (oxidation), plus, ideally, storing it dark and cool, even if room temperature is technically fine.
  This is done via methods like **canning** in glass jars or metal cans that can be vacuum-sealed. Canning comes with few but very important rules, because the spores of a potentially lethal bacterium, Clostridium botulinum, can survive even normal boiling temperatures. Without getting into the physics of pressure canning here (more on that later), the commonly recommended temperature to kill these spores is 121°C / 250°F, which can only be reached in a pressure canner, but there are also other ways to mitigate or neutralize the risk of botulism.
  You need to learn and understand how canning works, what the remaining risks are, and how to counter them – I'll explain the basics later. Home canning is not difficult, done with no issues by millions of people around the globe and for over 200 years. If you dabble around with it though without truly understanding its important principles and rules, you can end up with food that is at best very unpleasant, or at worst dangerous to even lethal – and it is potentially impossible to recognize the danger lurking in potentially ill-canned food until it's too late.
- There are certain **substances that have a slight preserving effect**. The exact detail depends on the substance. Some, by changing the pH of the food (acid vs. alkaline), can hinder the activity of certain microbes, as some microorganisms prefer acidic, others alkaline or relatively neutral environments. Others can have a mild antimicrobial effect and thus also hinder the activity of at least some microorganisms that can make food unfit for consumption, but also destroy desired microbial activity, like that from yeast for baking or lactic acid bacteria that turn milk into yogurt. Others can at least somewhat reduce processes like oxidation, or absorb moisture faster than the adjacent dry food, and thus reduce the humidity load on the food. Some, like salt, can even work at multiple angles at once.

None of these on their own makes food truly shelf-stable unless additional special treatment is used (as with some traditional methods of food preservation) – they merely help slow down the degradation or spoilage of food that already is stored at fitting temperatures and other required conditions.

- **Vacuum sealing** does not make any food shelf-stable, nor does it usually remove all air from a container. It merely prevents new air, and with it moisture or contaminants from entering a container.
  Such sealing happens automatically when proper canning procedures are applied while pasteurizing or sterilizing food.
  It is possible to vacuum-seal food containers without heating by using special devices, but this merely removes some of the air from glass jars – or a lot of it from plastic bags – and seals them completely airtight. Vacuum sealing does not change where or how you can safely store food regarding cold / frozen vs room temperature, it does not turn food shelf-stable if it is not already inherently so. Vacuum sealing slows down some of the factors that make food go bad – mainly by preventing additional moisture and oxygen from entering the container, thus reducing contamination and oxidation – while also reducing the amount of both already inside the container. It does nothing against heat or light, which can also affect your food.
  You can extend the quality and shelf life of food via vacuum sealing, but only if you store it under the right conditions: temperature, darkness, dryness, and keeping pests at bay. Moist food that is not shelf-stable, stored at room temperature, will still go bad pretty fast even if you vacuum-seal it, and in some cases you might not even notice it, due to the absence of certain chemical processes – and in the worst case scenario, as mentioned above, you can create potentially lethal food that way through Botulism.

Space & Environment

For your pantry space, usually the best spot would be what our grannies and great-grannies had, if you can manage it at your home too: A reasonably sized **pantry room** that is unheated, or at most just heated enough to prevent freezing in winter, and also stays reasonably cooler than the rest of your home in summer. Traditionally they were often on the north side of a building (no direct sun exposure on the walls) in the northern hemisphere, or the south side in the southern hemisphere.

Another classic is of course a **cool basement**, if you have one and can keep it reasonably free of rodents and other pests, clean, and sufficiently dry. Moisture seeping through basement walls or floors can corrode the metal parts of cans and the lids of glass jars, exposing the food stored in them to air and possible contamination.
No matter how well you store your food in well-sealed containers, any dirt in a storage room can attract rodents and other pests. The dirtier it is, the greater the risk that something gets into your containers and spoils the food, or damages the containers themselves. If you only have a small cellar compartment in an apartment building, and the trash cans are stored right around the corner, or you have doubts about the cleanliness of the neighboring compartments, I would not recommend storing food there. If you do it anyway, stick to food in sturdy metal cans, and even then only if the space is truly bone-dry, so there is no risk of corrosion.

If you have no such dedicated, cool room, you can use **any other space** available in your home, as long as it is sufficiently suited – even if slightly suboptimal.
As some general rules and tricks to make such suboptimal spaces as optimal as possible, keep the following things in mind, with some of the following applying also to typical cool pantry rooms or basement rooms used to store food.

- **Heat goes up**: Temperatures tend to be lower near the ground, and higher near the ceiling. A simple thermometer can give you an idea of the real temperatures you are dealing with, but usually it's not really needed. The more any food really needs to be stored cool, like almost anything containing a lot of fat (nuts, seeds, cooking oil etc.), the lower on your storage shelves it should go. Things that are less sensitive to warmer temperatures can go up.
  Note that near radiators, in smaller rooms, or in rooms with a lot of air movement – for example through AC or fans – this general rule might not hold. If you have underfloor heating, this of course also negates the "cooler near the floor" rule.
- **Heat follows the sun**: If you can, keep your food away from the outer walls of the building that have significant sun exposure. For your shelves and storage, choose those sides of the building that have the least sun exposure over the course of the day, or otherwise remain cooler than the others. It might be just a degree or two, but combined with the temperature difference between bottom and top shelf (see above), it can still add up enough to have at least some effect on certain processes in your food.
- **Cleanliness and Care**: The following applies to all kinds of food storage spaces: Keep them clean so you do not attract insects and rodents, and if needed, use a natural insect repellent. Avoid any toxic chemicals near your food storage areas, especially if the food is stored in plastic containers, as some chemical vapors can permeate plastic. When you are rotating your stockpiles (newest to the rear, oldest to the front), use the opportunity to check all the packages and lids, and visually inspect the contents to see if everything still looks okay, and remove what turns out to be spoiled. If you find damaged or degrading containers, transfer the still-good food as soon as possible into a clean, undamaged one. The old container may or may not still be useful for storing non-food items.
- **Avoid moisture**: If you store food in the same rooms where you also live, especially in the kitchen or near the bathroom where higher humidity is likely, try to keep your food containers away from the worst sources of humidity, and make a point of storing as much as you can in really airtight containers to keep the moisture out.
- **Keep it dark**: If you are using shelves in a usually well-lit room and store food in transparent containers, stash those containers in opaque boxes, baskets, or buckets that keep the light out. If you store several food containers together in such boxes or baskets, it also makes dusting things off easier. If you store your food containers in open baskets, boxes or buckets, you can simply place a thin wooden board, or even just an old kitchen towel or other sufficiently large piece of cloth (like a clean old piece of fabric from former bedding or clothing), over the open basket or box. That usually suffices to keep things dark and in one a bit easier for dusting everything off.
- **Keep it neat and orderly**: Whether on your shelves or in boxes, try to keep the same type(s) of food together in the same area or box(es), so you can easily rotate the food

containers, easily keep an eye on which containers are older and which are newer, and easily see how much you really have. Keep proper notes on containers that are not store-bought and thus don't already have a best-before or similar date on them. Note down what and when you canned, vacuum-sealed, or otherwise added to the particular container, to keep a good sense of how old each of them really is.

- **Find your preferred rotation arrangement**: Find a good organizing and placement method on the shelves or in the boxes that makes it easy to rotate the containers of the same type of food. Make it as convenient as possible to add the newest containers to the rear and have the oldest in front, ready to be used up next. The more inconvenient you make it for yourself, the more likely you are to just toss things in there eventually, and end up with a messy, disorganized pantry with no clear sense anymore of where what is or how old each item is.

Caveat about cement flooring: As mentioned below, don't store plastic food containers directly on cement flooring, as some chemical compounds in certain types of concrete or cement can leach into or degrade them. For the same reason don't store chemical substances like detergents (especially petrochemicals, especially in plastic containers) next to plastic or otherwise potentially vapor-permeable food containers: Chemical vapors can leak from one into the other.
Usually the risk is small, as the amounts involved are such tiny traces that it is not a real health risk, but there is no need to take that risk to begin with. It is usually fine to store them in the same room as long as it is well enough ventilated, while storing your food containers in a poorly ventilated room with fuel cans, oil tanks, and lots of other chemicals is a bad idea – both for aroma, and long-term for your health.

Plastic Containers

For simple, cheap, and good food storage you can go just fine with **plastic containers** if they are really air tight (or not if that’s what you need for some special types of food items) and of course proper food-grade with no questionable chemicals (how "food grade" is labeled can vary by region, so please inform yourself about that as needed).

Thoroughly clean them with water and soap, maybe a dash of vinegar before reusing, and you can keep using them for dry food just fine, and also most oily or otherwise “moist” food. I will make special notes further down if certain things need to be kept in mind with this kind of storage.

The biggest potential issue to note here once more: Certain chemicals can permeate through the walls of some plastic containers. Usually this is a non-issue, but to be on the safe side do not store any plastic food containers right next to other containers that contain any potentially harmful chemicals, most of all petrochemicals, as vapors can migrate from one into the other. Note that even detergents often belong to this category.

For the same reason do not keep any plastic containers with food (or beverages or drinking water) directly on any concrete floor, as depending on specifics, some chemicals from the floor

could migrate into the plastic container and food – simply place a wooden board, a thick piece of cardboard or some similar sufficient divider between floor and plastic containers you want to store in a room with concrete flooring.
All of this is usually a non-issue as we are talking about minimal trace amounts not harmful for humans, so don't get paranoid about any of it, but for best storage practices keep this in mind. If it were really so horribly dangerous that you have reason to be paranoid about it, anyone who ever ate a sandwich for lunch in a car repair shop would be horribly ill already ;^)

Glass Jars / Mason jars

A great way to store food is in **reused glass jars** you get anyway, if you don't want to buy those specifically to all look the same (or for any other reason, of course). A glass jar with a metal twist-off lid (aka: screw-on lid) with a special inner sealing, also known as a canning jar or preserves jar, can be reused many times. Mason jars are a special version with a two-part lid. Once the lid no longer seals well due to wear, age or damages, you can simply replace it. The glass jars themselves can potentially out-live you if they don't chip or break. Many such glass jars also have standardized opening sizes, so you can check if the lid from one jar fits well and airtight onto another. This way and once you have enough glass jars for your needs, you can still stash away further lids of the right size you get anyway with the food you buy. There are also standardized twist-off lids you can buy online if you need to.

To **clean glass jars properly** before using them again, wash them really thoroughly with hot water and a decent detergent, and usually for dry storage goods you are good to go. If you still detect some faint scent, especially on the lid, you can leave the jar and lid out to air for a while, wash them again once the odor is gone, and then it should be fine. Sometimes sprinkling a bit of vinegar or baking soda onto the lid while airing it can help with that.
If you want to store anything more sensitive to microorganisms in these jars or use them for home canning, please heed the following: 1) Inform yourself properly how to make preserves in glass jars if not done yet. It is not difficult, but there are a few very important things to know.
2) Pasteurize these jars before use.
Pasteurization is easily done: Boil hot water, and if you want to be extra safe add a good splash of vinegar or a smaller splash of concentrated (usually around 20-25%+) vinegar essence. Once the water is bubbling, keep the completely submerged jar in the boiling water for a few minutes. Ten minutes puts you and that jar on the safe side. Turn it a few times if air bubbles get trapped inside to release or at least shift those, and do the same with the lid. Always boil not just the jar but also the lids, but do the latter for only 5-10 minutes: Longer than that, especially with vinegar in the water, can damage the sealant of the lid.
Note that this is not "medically sterile", it is not sterilization but pasteurization = disinfection that you are doing with this boiling process, but it is hygienic enough for most food purposes, as nearly all vegetative pathogens are destroyed in the process. If you want to sterilize anything with heat you need a pressure cooker, which for most (but not all) purposes of cleaning such jars is needless overkill.

You can also **vacuum seal glass jars** with dry goods, but please for the love of God inform yourself before you do so. Done wrong you risk damaging the jar or lid, making a food mess, or

at worst creating conditions suitable for dangerous food poisoning down the road.
There is good information around on this topic, and sadly tons of very dangerously false, or dangerously incomplete information. I will mention some general risks further down when I talk about vacuum-packaging food in plastic or mylar bags, but with vacuum sealing goods in such jars a few extra things need to be observed. If you do it correctly though, it's a neat little extra to keep things stored under the right conditions in good condition a little bit longer, and thus extend their shelf life. This is not the same as proper canning, which is solely for wet foods, not for dry foods – and it will not make any food inside more shelf-stable!

- About Canning Food

I will not get into nitty gritty deep details on how to properly can food with all the specifics, including what not to can (e.g.dairy, eggs, grain-based food), and the different recommendations in various parts of the world. You can read up on it and find plenty of videos on the internet, just be aware that some potentially dangerous information or omissions can float around. The following is not to teach you in detail how to do proper canning at home, it is to give you a basic idea about the mechanics of it. From this foundation you can inform yourself and learn how to properly do it by whichever of the various methods out there you find most fitting for yourself, while understanding why different sources might recommend different things.
Note: If you only consult “US government approved documents and recommendations” like from the USDA (https://nchfp.uga.edu/resources/category/usda-guide) you might be eventually surprised that other countries have different recommendations, and they work just as well.
To give you an idea how much views can differ: In the US, only canning via a pressure canner is still considered acceptable and safe practice, although this ignores that it comes with its own potential drawbacks and risk angles if that is all you do with your home-canned food. On the other hand in many parts of Europe even government recommendations consider it perfectly fine to use just pasteurization, not sterilization for canning food, for which you just need a good pot and a stove – but you need to be aware of certain principles for handling the canned food afterward.
Going by the data I could find – which is tricky to compare due to different reporting systems – per capita rates of botulism from home-canned food in America and Europe seem to be broadly in a similar range, or even a bit lower in some parts of Europe, though not all. This might be a good example of how neither path is completely right or wrong, and why learning from more than one source is a good, or even important habit, so you can get a good, more complete picture and make well informed decisions about your own practices.

The main principle of canning is simple. I will just explain it for glass jars:

1. For the process heat-stable glass jars are used with a specially designed twist-off / screw-on lid made of metal with a sealing coating on the inside, commonly known as Mason Jar, Preserves Jar or Canning jar. The exact way these lids are designed can vary in different regions of the world, and sometimes you find even different versions used side by side in one region. In some parts of the world also entirely different types of lids are still sometimes used, like glass lids with just a rubber gasket held in place by clamps until at the end of the entire process the created vacuum will hold the lid in place on its own, commonly called Weck Jar.

Best practice usually recommends cleaning and at least pasteurizing if not sterilizing the jar before filling it. Inspect the lid and glass jar (especially the rim) before you do so for any signs of damage, wear or aging, and with Weck Jars, inspect the rubber gasket as well.

2. The prepared wet/moist food is then placed in the jar, either hot or cold, which changes a bit the next step. Care needs to be taken to keep the rim of the jar absolutely clean, so that no food or other particles can stay stuck between the rim and the lid, which is then firmly screwed on, held on by clamps, or a similar method. The jar is not filled too high, as the food will slightly expand later on, and could bubble over. How much exactly depends on the type of food.
3. The jar filled with the food is then heated by a variety of methods: Typically in a pressure canner to achieve sterilization (which requires pressure to reach the required temperature), or for pasteurization (which works without pressure) in a large enough pot covered with a lid, or in a water bath in a deep pan in the oven. I will mention the issue with Botulism and the pasteurization method further down, to make clear why this is still a common practice in parts of the world, and can be perfectly safe under the right conditions as per recommendations of various experts and even governments, even if not by others, such as the US government.
   If the jar and food were room temperature, the water it is placed into, or if using other methods like steam / oven etc. need to be slowly heated up, so that no sudden heat shock happens to the glass, which could chip or even break from that. If the jar and food were sufficiently hot, they should be also placed into an already hot environment the same way, for the same reason.
4. The container and food in it need to be heated like this for a sufficient time to kill all microorganisms at the temperature reached by each of the two methods, which depends on the size of the glass (the wider the longer), the method used, and the type of food to be canned this way. As a side effect some nutrients degrade or are destroyed in the food, most notably vitamin C, and to a degree also some B vitamins. The higher the heat, the longer the heating, the more of these nutrients get destroyed, and of course the food might also get more soft or even mushy.
5. During this process the food and air inside expand slightly (that's physics for you), and some of the air gets pushed out due to how the lid and its seal, or the gasket and clamps, are constructed.
6. After the prescribed time the still-hot container with the food is removed, and cools down at room temperature.
7. Because the food and air inside of the container expanded during the heating process, and now as they are cooling down contract slightly in volume again, this creates a "vacuum" or to be more exact a negative pressure environment aka "vacuum sealing". There is still some air in the jar, just less than the surrounding environment would have for the same space. This often causes the cooling twist-off lid to make at some point a slight popping sound, and it definitely should slightly bend inward from this process – this is the visible sign that a proper negative pressure aka vacuum sealing has been reached. With glass lids and a rubber gasket (and classic Mason Jars) you can't visually see this like with a one-piece twist-off lid, but as the glass cooled down entirely, you can

remove the metal clamps or ring of the Mason jar: If glass / metal plate and jar with the gasket between them stick together, you know the negative pressure has been created, otherwise lid / gasket and jar would come apart again.

8. Any jars that do not have these proper signs of vacuum sealing (lid slightly bent inward / glass or metal plate firmly stuck to the jar) are still sterilized or pasteurized regarding their content, but only for a very brief time. Soon the lack of vacuum sealing will lead to the very real risk of microbes getting in, and the food rotting at room temperature – or eventually even in the fridge. As this food without proper sealing is not truly shelf-stable, you have to store it in the fridge or freezer just like any such freshly made wet food that could spoil.
   Alternatively – and I don't recommend it, as you could end up overboiling the food – you can opt to re-can it with a new lid. A failed vacuum seal is almost always caused by a damaged lid or gasket; rarely a damaged glass rim can be the cause instead, so check for that while you're at it, too. Usually it's best to toss such a failed lid or gasket, or use the jar and lid elsewhere for purposes not involving food canning anymore. With proper practice it should be very rare for this to happen, though.
9. If the lid has slightly turned inward / the glass or metal plate is properly stuck on the glass jar, you now have properly canned food: The content can technically outlast you, as long as the lid and glass jar don't degrade or break and release the negative pressure. There are no living organisms left in the food that could spoil it, with one caveat for the pasteurization method mentioned below. Label the jar with the canning date and content, and store it away.
   If you just use the pasteurization method, I highly recommend reheating the food before eating, and also consider Tyndallization as a potential step 9.5 – I'll talk more on that in the next chapter.
10. Over the years the food can and probably will slowly lose flavor and color (especially if exposed to light), and some nutrients in there will eventually also break down, but it can stay technically "fit for consumption" even after multiple decades (if you don't mind the eventually also probably degraded taste…).
    Labs have analyzed cans and jars with food several decades old, and according to lab results the food was technically still "fit for human consumption" due to no microbial contamination, no spoiling otherwise to make it unfit. To my knowledge the record holder so far are food cans (almost for sure created with pasteurization, not sterilization!) from the steam ship Bertrand, sunk in 1865 in the Missouri River. They were analyzed in 1974, by then 109 years old and having spent quite some time underwater, but the cans had maintained their vacuum seal. This more-than-a-century-old food had lost its scent and unsurprisingly did not exactly look fresh anymore, but it still turned out in the lab as just as safe to eat as at the time it was canned, with no microbial growth. Nutritionally most of the vitamin C and A was gone, but the protein content was still high, and the calcium content was still comparable to equivalent products today!

- Caveats about Botulism, Canning, and Canned food

Here now is the important part to understand about sterilization via pressure canner / pressure cooker, and pasteurization, which can be done in any suitable pot on a normal household stove or oven, and why both methods can be dangerous, or perfectly fine.

If you ever want to get into canning food, please read the following carefully and make sure you understand it, because this is the main thing that can go horribly wrong with canning food – even though it is exceedingly rare, and usually involves someone messing up an important step, no matter if via pressure canner (which can give you a false sense of safety) or via "just" pasteurization (if you miss an important last step).

Some spores of certain microbes can survive normal boiling if you do not reach 115-121°C / 240-250°F with a pressure cooker, which is the temperature range required for sterilization rather than mere pasteurization. The only really important one for the topic of canning food is **the potentially lethal bacterium Clostridium botulinum** which I mentioned already before, and which is the reason why canning food in the US is recommended only via pressure cooking, while in other countries, additional precautions are taken to make pasteurization just as safe – or even potentially safer than pressure canning that skips an important last precautionary step, which many people in the US and elsewhere apparently are no longer aware of.

Clostridium botulinum is a bacterium that exists nearly everywhere, including the soil, but it is not massively, nor always present on everything, either. It also exists in various strains, which may favor different types of "food" or environments and can behave slightly differently. They all have certain things in common though: To become active and multiply, they need a

1. **non-acidic**,
2. **warm enough** (not very cold/frozen, not boiling), and most of all
3. **anaerobic** environment (little to no air), and of course
4. "**food**", and they love in particular protein-rich food, like meat, fish, dairy products, and also relatively protein-rich plant-based food like e.g. legumes or mushrooms.

In aerobic conditions these botulinum-bacteria can't do well, or we all would be dead already, because they produce a very dangerous toxin of which just nanograms can kill an untreated adult. In the past it was almost a death sentence; nowadays you have a relatively good (more than 9 in 10 in countries with good medical care) but not guaranteed chance of survival with treatment – though you are not going to have a fun time during treatment and rehabilitation, potentially for months, and may sustain lasting damage. If you want to know details about what it does and the symptoms, read up on Botulism.

In vacuum sealed glass jars or cans containing food that is not sufficiently acidic (pH well below 4.6, think orange juice or more) humans create the perfect environment for C. Botulinum to multiply and be fruitful, and that means releasing their dangerous toxin, which is odorless, tasteless, and can in theory even be harmful if inhaled, and to make it even worse some strains of Clostridium botulinum do not even produce the kind of gas like others that would eventually "lift the lid" as a sign that something went wrong with your canned food.

There is no safe way without a lab to know for certain whether botulinum bacteria are growing in your canned food, and yes, that means also if the sterilization process didn't work properly, which can happen.

Clostridium botulinum bacteria in their vegetative (active) form do not survive pasteurization, and if you boil your glass jars (or food) in a pot on the stove at above 85°C / 185°F, they will die. In such a pot you can usually reach around 95-98°C / 203-208°F; only at very high altitudes might it be less (if you want to know how to calculate that, look it up).
The problem: Their spores, the "dormant" or inactive form of these Botulinum-bacteria, can survive such heat, and it requires sterilization to kill the spores off, too. This is why you see recommendations to sterilize at 115-121°C / 240-250°F. The higher the temperature, the faster the spores are destroyed, so proper canning times in relation to the temperature used have to be observed, based on the type of food, the diameter of the glass, the altitude etc., or you might end up "just" with a very strong pasteurization / partial = unsafe sterilization.
If the spores are not killed off, and you store such a vacuum-sealed jar with not overly acidic food (extra so if rich in protein) at room temperature, they eventually revert to their vegetative state, multiply and are fruitful, and as they love the home you just gave them, which rarely exists like that in nature, they leave their potentially lethal toxin in the food as a "thank you".

You might now wonder: **Why are there still cases of Botulism** (poisoning with their toxin) **from self-canned food with pressure canning**, like by now the norm in the US? And not just that, from what I could find, the rates are similar or even slightly higher per capita in the US than in Western and Central Europe, where most households practicing food canning use just the pasteurization method. My suspicion is that pressure canning only works really well if you follow the prescribed method exactly: The right size of jar with precisely the right food recipe with the right time depending on the altitude you are on, to ensure that really all parts of the food have been sterilized, not just pasteurized. The pressure canner also has to function correctly, and some malfunctions can be hard to detect – otherwise you end up with results that are merely strongly pasteurized, and if those spores were in the jar or food you soon have Botulism waiting for you in that canned food. In Europe on the other hand additional steps are practiced, which can cover the risks of mere pasteurization fairly well as a mitigation strategy. Human error can still happen though.

Luckily for all of us, Clostridium botulinum is not super frequent on all of our fresh food to begin with. To give you an idea, some figures suggest that traces of the bacterium were found in some cases as rarely on 1 in 128 carrots and 1 in 188 green beans. On other types of food it can be drastically more frequent, like it seems to be extremely common on mushrooms.
If those traces were from the vegetative state bacteria, they would have died even just from pasteurization. If those carrots or beans had been washed or peeled before being turned into canned food, there is a good chance the Botulinum-bacteria would've gone down the drain or into the trash. But if they were on them in their spore form, and somehow made it into a jar that wasn't get properly sterilized, and if the food was not too acidic for C. botulinum, extra bonus points if it was rich in protein, that's when you can get botulism waiting in pasteurization-canned food.

This is why fruit jams and pickled foods that are acidic enough can't harbor active Clostridium botulinum, while canned meat or fish (especially if low in sodium) absolutely can. Yet if you add enough vinegar to some tomato sauce (both acidic) and self-can some tuna in it, that's already the end for Botulinum-issues thanks to the acidity. With low or not acidic food made from low / no protein veggies and then canned, there is a lower but not zero risk for any present Botulinum-spores to become active, multiply, and produce their toxin.

This, the fact that our common food preparation practices alone remove the not super frequent Botulinum-bacteria from our food before the actual canning, already reduces the risk even if a pressure canning somehow doesn't reach full sterilization of the content of the jar, just as if you just pasteurized the food.
Furthermore, most commonly home-canned foods are on their own sufficiently salty or acidic or both, like pickles, tomato sauce, jams, jellies, stews with sufficient salt. In such acidic / salty environments the spores don't feel comfortable enough to become active and thus problematic, regardless of "failed sterilization, only pasteurization reached" or "just pasteurized anyway".
This means not that all canned food is safe or unsafe. It just explains why even if things don't work perfectly, you do not end up with tons and tons of Botulism, yet there is always a small remaining risk, even if you think you used "the best method".

In Europe and other places, where sterilization is not that common, and pasteurization is the common way to can food at home, two other very common practices regarding self-canned food then **reduce or almost entirely negate the risk of botulism**. These two things are most likely the reason why you see equal or less cases of botulism in places like Europe where canning at home via pasteurization is typical, not pressure canning like in the US, where these last steps are apparently more often missing from the picture from what I could find.

1. **Double or triple pasteurization**, aka Tyndallization, is – contrary to what the Wikipedia article claims – not entirely outdated, and still a recommended practice in some countries where home-canning via pasteurization is still deemed perfectly okay. It is not foolproof, but it greatly reduces the risk. This is what risk management and risk buffering looks like in practice: If let's say (using fictive numbers for illustration purposes) you start with a 1:100 risk of botulism lurking on your fresh food -> you reduce it by factor 10 to 1:1,000 by properly cleaning it -> you reduce it by another factor of 10 by pasteurization (or failed sterilization turned just pasteurization) by killing all the active bacteria (but not the spores), reaching 1:10,000 -> you do just one round of Tyndallization to reduce it by another factor of 10, you get to a very low 1:100,000 chance of Botulism from this food = Your chances of dying (less than 1:10 if you get botulism, so the total per jar of canned food is 1:1,000,000!) or getting seriously injured in a traffic accident are higher than from eating food prepared this way.
2. **Thoroughly Re-boiling**. This is the step I highly, highly recommend if you get into canning food yourself, or also if you eat home-canned food from others, no matter whether it was made via pressure canning or "just" pasteurization in a normal cooking pot or oven. All that is needed is putting the food from the jar in a saucepan or shallow pot on the stove, heat it until all of it reaches at least 85°C / 185°F – ideally more – (which means a proper boil) while stirring for even heat distribution, and let it boil like that

for at least 10 minutes (a bit more at higher altitudes). Most likely less than 10 minutes are needed, many guides even just say 5 minutes, but others say 10 minutes with the extra time as a safety precaution in case some parts of the food (especially if a bit more solid than a sauce or mushy stew) were not as thoroughly at boiling temperature yet when you thought they were. Important is the core temperature of everything reaching the needed temperature, then within very few minutes the food is as safe to eat as it can get.

Reason: Botulinum toxin is a protein and not heat-stable, and if it was present in the food due to contamination + just pasteurization or failed sterilization, it gets neutralized at these temperatures within minutes, and so do the active bacteria that produced it. The spores will survive the process, but they are no issue to consume, as your stomach acid is a very unhappy medium for them. You have most likely eaten in your life already countless botulinum spores from fresh food, as has everyone else, and we are still all here with no ill effects. Note that infant botulism is a different, dangerous story.

With this simple method you can fairly safely eat (as far as there is no risk-free living) any otherwise properly made, self-canned (sterilized or pasteurized) and long-term stored food. Without it, even if you pressure-can, there is always a certain residual risk, as the couple of hundred botulism cases each year in the US are ample proof of, while only a handful to a few dozen cases occur each year in Western and Central Europe.

An important word of caution: If there are still Botulinum-spores in such re-boiled food from a jar or can, they can eventually revert to vegetative bacteria again and once more produce their toxin. This is why if you open such a jar and re-boil the canned food as a precaution, you should not let it sit around at room temperature for long. Eat it soon, or refrigerate it. Keep in mind though that the fridge will slow bacteria including potentially present Clostridium botulinum down, but not utterly guaranteed stop it. Therefore don't let re-boiled canned food sit around in the fridge for long either.

My personal safety practice is to never let any canned and re-boiled food sit in the fridge longer than a day or a day and a half – although most likely even 2 days would still be fine even if there are some botulinum spores in it, maybe more. It's hard to say. And yes, I have been canning food via the pasteurization method for more than a decade by now so I have a bit of experience, even though it is "anecdotal". If you want to be even more cautious or a bit but not too much less, I can't fault you, we all have different risk tolerances.

CAVEAT: Signs of spoiled canned food: As you know now, you cannot see, smell or taste if canned food has been contaminated with Clostridium botulinum and its toxin. You can detect signs of it with some strains of the bacterium, but not all, and also with many other bacteria or fungi that can contaminate pasteurized or sterilized canned food if the vacuum seal eventually fails and they get in there and get to work.

This means you have to use the above precautions if you want to be really sure, but if any canned food shows any of the following signs, please do not open the can or jar, just throw it all away. It is not worth trying to save the jar, just toss it, these things are not expensive enough to be worth the hassle of maybe sterilizing them.

- "Bombage", any kind of swelling or bloating of the lid or can, is a sign that gas production has happened inside the container, typical for microbial activity. The same also goes for cans with suspiciously strong inward dents that can't easily be explained by physical impact or damage.
- Loss of the vacuum seal, as another potential form of invisible bombage, or or simply because the lid seal has failed. You cannot be sure in such a case that no microbial contamination and accordingly spoiling – Botulinum or otherwise – has happened. If the lid comes off easily, if there is no hissing or popping sound when you open the can or jar, the vacuum seal most likely has failed, the food is unsafe to eat.
- Any signs of mold, rot, suspicious changes in texture, or the kind of discoloration that can't easily be explained otherwise, like just a bit of the food dried onto the side of the glass from the boiling process, or slowly losing some of its color over many years of storage. Always use visual inspection first, then a smell test, and only after that a final taste test – spit out anything that tastes off, rinse your mouth with water (or vinegar), and toss the food. Especially if it tastes foul, bitter, metallic, sour even though it should not be, or just plain strange, toss it. Remember though: You can't reliably test without a lab for the toxin that causes botulism, so better do the taste test only after re-boiling!
  Note about cans: It can happen with food stored in cans for a long time (beyond their "best before date", sometimes even before) that the food is in theory still perfectly fine to eat, but some of the metal and/or sealing material has leached into it. Whether that is acceptable for you or not is up to you, opinions about how safe or not this is, or when it becomes unsafe, vary a lot.
  Note about texture changes: It is fairly normal that a bit of "phase separation happens". So if some oil swims on top of the food, the more solid parts are further down, that is usually no sign of spoiled food. If anything got mushy in ways the cooking process doesn't explain well enough, or if it turned slimy, moldy, or suspiciously crumbly, don't take any risks: Toss it.
- Visible gas bubbles in the food when there should be none, or if the food is even bubbling. That's a typical sign of microbial activity releasing gasses. Note that it is fairly normal to have static air bubbles in especially more liquid food from filling the container. When there are "fizzy bubbles" on the surface, bubbles that seem to move, or bubbles that appear where there were none before, or that get bigger, that's when something went wrong with the food.
- Liquid, foam or similar squirting out after opening the can or lid. This is usually a sign of microbial activity having happened in the container, and once opened and at normal environmental pressure reacting with the air very fast, due to the difference in pressure. Air is supposed to rush in when you open cans or lids of jars with canned food. If air or even liquid rushes out, clearly something has really gone wrong.
- Strong signs of corrosion (rust) of the lid or can. If just a few small surface spots have appeared, it is most likely still fine, just don't re-use the lid. If the corrosion looks deeper, there is a risk that the can or jar has lost its air tight vacuum seal, even if you don't detect it otherwise yet. Usually if it hisses/pops when opening this should indicate intact seal, but nonetheless it cannot be ruled out that either some chemicals or metal leaked through the corroded parts into the food, or microbes got in.

- At any signs that the glass jar has cracked: Toss glass and food. Even if it just happened and no microbes could have gotten in yet, you cannot rule out that glass splinters have already ended up in the food, even from seemingly small cracks. If you discover a cracked jar in storage, it is all but guaranteed that also the vacuum seal was lost and microbes could get in.

- If you think about home-canning

After reading this chapter and the one before you now have a good foundation to understand what self-canning wet / moist food really does and doesn't do, the differences between sterilization and pasteurization, microbial and even chemical contamination, in particular Clostridium botulinum, and what good practices can look like.

This does not mean you are good to go to do home canning, as I have not explained the nitty gritty details, the methods, tricks and correct boiling times for the various methods, nor what types of food should not be home-canned. These two chapters above were written to give you a mechanistic idea about canned food, so that you can store it well and also consume it safely, and as a starting point if you want to learn how to home-can food. with this knowledge you can already enjoy your canned food more safely than most people around you, and even those people have an exceedingly small chance of contracting botulism or other food poisoning from canned food gone wrong, just not zero.
If you want to get into canning food yourself though, please inform yourself properly about the correct details for the method you are choosing, so that you know what you are doing when it comes to making preserves that way. Otherwise please leave that part of filling your pantry to the food industry, rather than potentially literally playing with your life or that of others if something really really goes wrong (rare as it might be).

None of what I wrote here is to scare you: Hundreds of millions of people around the world have eaten canned food for more than 2 centuries – made not by modern industrial standards, but by what we would now consider “household methods”. Cases of botulism or other food poisoning from canned food gone bad were rare then and remain so today.
Furthermore, the vast majority of these rare cases of botulism can usually be traced back to canned food where someone really ignored some important steps, and often it involved protein-rich food – so if you want to be on the extra safe side you can simply choose not to can meat, fish, legumes, dairy products, mushrooms, or other plant material that is relatively high in protein.
Bottom line: It's perfectly fine to make your own food preserves via canning methods in such glass jars (or even cans if that’s your thing, but it’s more expensive and involved), just know what you can safely do and what not, and what precautions to take when making canned food preserves, and when eating them.

If you get into home-canning, also be realistic: Start with small steps, get some experience and a feeling for how much time it really takes to prepare and then home-can this or that type of food item / meals. Especially as a newbie it can be easy to misjudge this. When certain things are on sale, let’s say potatoes or carrots, and you buy a giant amount that would take 1-3 days to

properly prepare and can, make sure you have that kind of required time and energy. If you are working a full time job and come home exhausted, chances are those big bags of vegetables are going to sit there and rot away. That, or you will run yourself ragged trying to process them into canned preserves anyway.
Also don't start with the most difficult things first, like home canning cake or bread (by baking it in the can, deemed in general risky by most food safety authorities). Try your hand first with something simple like a veggie stew or some chopped veggies. Work your way up from there, until you either become a canning pro, or at least a well-seasoned canning amateur – or realize that home-canning is simply not your jam (pun fully intended), and that's fine. The food industry will thank you for your business as you buy their affordable, well made canned products.

Caveat about other risky practices related to Botulism: Some of the cases of botulism from "home made preserves" do not come from classic home-canning. Especially in some parts of the world, e.g. well-documented for Italy, a significant number of botulism cases per capita are the result of other risky preservation methods creating the same dangerous conditions: storing wet food in anaerobic, non-acidic, insufficiently salty conditions – like marinating it for weeks or months in oil at room temperature and without any heat treatment.
Please do not engage in such practices, even though these practices have been around for centuries or more. It takes a lot of experience to do it properly, and even then there is always a certain non-negligible risk involved. If you love your cheese or tomatoes or onions or whatever else marinated in oil, leave that to the pros and buy yourself those jars from the store. You even get "free" jars on the side with these delicacies, to reuse elsewhere if you like!

PS: Finally, after over 8 pages on the topic of canned food and home-canned food, please do not take any information here as gospel or the final word, or think that there isn't more for you to learn about it, even if you do not engage in making canned food yourself. Even I, after more than a decade of doing this, still learn a new thing here and there about it, and I do not claim that I know it all, or my knowledge is flawless – I just hope I have a pretty good foundation and some experience under my belt (with pasteurization in a cooking pot).

Mylar bags

Another excellent storage method can be **Mylar Bags**. These do not have an indefinite, but pretty long shelf life, and are usually basically "zip-loc bags but even better" at blocking light, oxygen and moisture, and they are more durable than simple, flimsy plastic. You can read up on them and the why and how they are better than plastic bags, maybe starting here.

Food-grade mylar bags with a "zip-lock" can be used very well to store especially bulky, dry food, if you do not want to use glass jars or plastic containers. They cost a little to get started, then you are good for many years, before you notice they no longer stay properly airtight and have to replace them. They can also be cleaned if you are thorough enough, and reused with no major issue.
Mylar bags come either with a zip-lock, or with no zip-lock at all, and are meant to be heat-sealed or even vacuum-sealed. For the latter you need an appropriate sealing device.

Note: Ants and some other insects can gnaw through thin plastic bags if not too thick, but will have a hard(er) time with properly thick mylar. Rodents are a different story – they can absolutely get through mylar bags, and what rats will chew through is absolutely mind-boggling.

Vacuum Packing & Vacuum Sealing

Vacuum packing is based on a simple principle: Air is mechanically sucked out of a bag or other container, without any heat involved like with canning food during the pasteurization / sterilization process (see above). This reduces the amount of oxygen, and also air moisture which can still impact the food.
If it's a bag, that bag is then also heat-sealed, and thus sealing the food against any more oxygen, moisture or microbes getting in, until you open the container. It also keeps some pests at bay, though not all, depending on the material. The reduced oxygen and moisture can also reduce the activity of aerobic microorganisms in the container, slowing spoilage. Regarding anaerobic microorganisms (including C. botulinum!), it might actually create better conditions for those!

Important Caveat: I will talk more about this in detail further down, because some things have to be made very clear, and I am at times horrified about the erroneous information or even dangerous omissions and false claims about vacuum sealing. So if you want to get into vacuum sealing, please first understand the following, and never forget this:

- Vacuum sealing does not make the food shelf-stable if it wasn't already before.
- Vacuum sealing does not create a true vacuum in the container (usually).
- Vacuum sealing does not change the storage requirements for any food.
- **Vacuum sealing wet / moist food and then storing it at room temperature, or even for too long in the fridge, can be a dangerous way to catch potentially lethal botulism or other types of food poisoning**.

As mentioned, there are versions of mylar bags you can heat-seal, or even vacuum and heat-seal, which is one of the best methods of long-term food storage under the right conditions, for the right purposes, like if you want to keep dry food stored not just for a few months or a year or two, but long-term. Otherwise honestly for most people it is barely worth the effort and extra material, especially since mylar bags are more expensive than simple plastic bags suited for vacuum-sealing, which might suffice as well – and even those often make only sense under certain conditions. Why I take this perspective, I will explain further down.

As mentioned, besides mylar bags there are also other suited plastic bags (not just any plastic bags – they have to be suitable for the process!) that can be used to vacuum-seal and store suitable food supplies you have. Funny enough, you can also re-seal some (but not all) types of opened snack bags with these machines, either by heat or vacuum (depending on the material, so do so at your own risk if you want to, after informing yourself thoroughly).

Even some types of glass jars with the right kind of lids (like Mason Jars) can be vacuum-sealed with certain devices that are also available for household use, and there is also a trick to do it with any kind of glass jar that is suited for canning.

In the following I will mostly talk about vacuum-sealing in plastic (or mylar) bags, as it is the most common concept people have about this, and also where most of the devil lies in the details. Where things are slightly different for glass jars – economically or otherwise – I will mention it separately.

Devices to vacuum-seal your own food cost, to my knowledge, between 25 and over 100 bucks, and depending on your needs if you want to use vacuum sealing you can be fine with a simple and cheaper but decent one if you want to use this method only occasionally, while for solid ones you probably start at around 50 bucks or more if it's not on sale. A pile of large plastic bags or similar amount of plastic-sheet on a roll (no mylar) for these devices can be had for around 10-15 bucks, some even cheaper.

Costs of vacuum sealing: Depending on where you live, you can roughly calc (based on the information I collected) between 10-20 cents for vacuum sealing for small helpings (200-300g) or 20-40 cents for larger ones (500-1000g) of food you seal-store that way (based on prices in early 2026). Note that this covers the cost of energy and bags. There are also reusable bags for certain brands, with those and if you store in them food that won't contaminate them too much (mostly dry food) and then clean and dry them before reuse, you can get as low as 5-15 cents per use, or if you can get really cheap plastic bags that work well enough (and hopefully will not degrade fast on you).
The electricity used is negligible, but keep in mind that these devices have a limited lifetime, so if yours cost you, let's say, 60 bucks and last 1000 vacuum sealings, that's another 6 cents in "real total costs". Realistically you can expect around 15-50 cents in costs per bag of food you vacuum-package this way, under best conditions around 10 cents.
People often underestimate how much it costs to vacuum-package food at home, as it is just a small amount with each bag, and you don't see the money flowing out of your pocket while you happily watch the machine suck the air out of the bag and seal it. I will go further into the economics of vacuum packaging of food, and my perspective on when and where it might make sense – and when it's just a fancy gadget that sucks air out of bags, money out of your pocket, and does very little in reality for your food storage.

Even with just these basics to give you some ideas, it is of course up to you if you want to get into this method, aware that it creates a bit of extra costs (and extra trash) for each bag of food you create this way. Just please never ever vacuum-seal food that is not shelf-stable, leave it at room temperature or for too long in the fridge, and then eat it. At best nothing happens, at worst this costs you not just a few cents, but a trip to the ER or your life (Botulism risk!).

Now, to give you a detailed idea about what vacuum-sealing really does for you and your food and what not, where it makes sense and where not, based on information I could find myself from digging around online and doing some math:

- **It does not create a true, total vacuum**. This is the first and most important thing to understand. Some methods and devices can create a true vacuum if the container or material (and food inside) can withstand it – and in a true vacuum, oxidation basically ends – but this is not what to expect from vacuum packaging at home.

- **It removes a good chunk of air = Oxygen & Moisture**: What you can expect from proper vacuum packaging is removing a significant amount of air from the container, and with it the involved air moisture. After heat-sealing a bag, the relative "vacuum" (negative pressure) should stay intact as long as the bag stays intact.
  Glass jars whose lids are vacuum-sealed without any boiling process, using special devices, can reach a similar state for the food inside, and you should be able to see the characteristic “dent inside” of the lid if it is accordingly designed, indicating the negative pressure inside (or the glass or metal lid now firmly kept stuck). Unlike bags, you can re-seal such glass jars again and again as long as the lid and glass are intact. As this is “cold vacuum” without heat treatment, the content of course is not pasteurized or sterilized.
  Some remaining air – or rather, the oxygen and moisture in the container – can and will still react with the food; there is just much less of it around to do so, and no more can get in until you open the container. Depending on how much air and moisture was removed, there might be still enough to provide the necessary oxygen needed by aerobic bacteria, and you can usually expect only a slight reduction in aerobic bacterial growth, not a full stop.
  On top of that, vacuum packaging sufficiently moist food can also create sufficiently anaerobic conditions. This can be worse than ordinary aerobic spoilage. Unless the food is sufficiently acidic or salty enough to stop it, you just created the perfect conditions for Clostridium botulinum to activate and produce its dangerous toxin if present in the container.
  For shelf-stable, dry food this tends to be much less an issue or none as C. botulinum needs enough moisture to be active, but don't count on mold or other microbial processes being fully absent in a jar or bag you've vacuum-sealed, if there is just enough moisture left in it – the growth will be just most likely much less.
- **Against pests** sealing in a plastic / mylar bag is very effective as long as it is just most insects. Some types of ants and bugs can still gnaw through those though, and rodents absolutely can, so don’t count on the flimsy plastic or mylar alone. If you want to keep those types of pests away you have to store your vacuum-sealed bags with food for long-term storage in sturdy containers. If you got undetected insect eggs already in the food though, that vacuum sealing probably won’t save your food, the little grubs will hatch and spoil it before they die – unless the oxygen content is too low for them to survive.
- Vacuum sealing is absolutely useful to **reduce oxidation** issues and **keep moisture away** from your food.
  This is most relevant for **dry food**, as more often than not it eventually goes bad due to these two issues (or pests, if not properly kept at bay) rather than due to rot, mold or other consequences of microbial growth. Spoiling through microorganisms usually only happens after too much moisture created the conditions for microbial growth to become possible.
  Therefore vacuum sealing such really dry food keeps it aromatic, nutritious and safe to eat for longer

    - by slowing down chemical processes – including by not letting in more of their causes (air, moisture) that can make food go rancid or stale – though it won't entirely stop them, and
    - by keeping out additional moisture, air, and the contaminants carried in them, which prevents the conditions forming (again) to allow for microbial growth and with it, spoiling.

  So vacuum sealing dry food is not strictly necessary, as properly stored, properly dry food is already more or less shelf-stable for many months if not years on its own. It can be quite useful though to increase the already existing long shelf life under proper storage conditions, and to increase the time dry food stays at really good quality levels, as it optimizes even further the conditions for “longer shelf life of nutrients and flavor”. If you take dried goods from the same bag, split between two containers, then vacuum seal one and the other not, you can expect the food in the sealed one to stay in decent condition around 50-300% longer, depending on conditions, so up to three times longer. If the unsealed food after a year might already show slight signs of degradation, the vacuum-sealed food might still appear almost as fresh as when first placed in the container, or show only minimal changes.

  Bottom line: If you want to enhance the shelf life and reduce the degradation of dry food that is shelf-stable at room temperature, ensure that it is really dry, properly clean, and not noticeably or potentially contaminated, while being aware that there will be some microbes on it, which with no moisture stand little chance to spoil the food. Fill the food into the bag (or jar) for vacuum sealing as cleanly and with as little moisture as possible getting in during the process. Then vacuum seal the container, and store it away. Only open it if the container gets damaged, the food goes bad, or you want to start consuming it – otherwise you'll have to go through the vacuum sealing process again , which is just a bit of time and energy for glass jars, but costs you real money and produces more trash if you do it with plastic bags. Some plastic bags though can potentially be reused for the same food and then just resealed after you removed some of the content, this depends on a lot of details.

- **For the fridge and freezer**: As a rule of thumb, but results can vary a lot: Most food, if vacuum-sealed, stays up to around 3 times longer fresh in your fridge, though this is not guaranteed, and of good quality in your freezer also about 3 times as long (from typically 3-6 months to 8-18 months). This is often more about buying your food more time before "quality really starts suffering after a certain amount of time in the fridge / freezer", less about "it won't spoil through mold or rot 3 times longer in the fridge" – and it very well might, but there are uncertainties involved .

  In some cases you might also just see an increase of maybe 50-100% quality extension, so don’t count on a massive difference from vacuum sealing. Marketing claims about "up to 5x shelf life" are exactly that: marketing claims. Don't count on it, even if in specific scenarios it might be possible.

  Honestly and in my opinion it makes no sense to vacuum-seal food you plan on keeping in the fridge, given how brief the real shelf life of it will be in the fridge no matter what. The additional risk of creating a case for Botulism makes it even more risky business. To make this clear: at best, the leftovers you vacuum-sealed go from good for 1-3 days to

good for 3-7 days in the fridge – beyond that, you are pushing it. And for that little bit of gain – especially for anything containing significant amounts of protein or starch – you run the risk of the food going bad in ways you might not even detect, giving you food poisoning or, at worst, potentially lethal botulism.
Therefore my advice: Even if you have your fancy vacuum sealing bags, if you don't plan to use/eat your fresh food soon, just throw it into the freezer. And for the freezer, vacuum sealing can make sense, but mainly to gain a quality extension of this food in the freezer. With vacuum sealing you can stretch the time until freezer burn and other quality changes make your food less palatable by roughly 3 times – or just a month or two, as there is always some uncertainty involved, especially if you are not a real pro at this already (in which case you probably don't need what I'm offering here anyway).
By default I'd usually not expect frozen food to stay at good quality for more than 6-12 months, if vacuum sealed up to around 1-2 years or if you are really lucky 3 years, varying a bit on details.
All of this is also why I consider vacuum sealing for storage in the fridge pretty pointless. For the freezer, it might make sense if

1) the cost of vacuum sealing is significantly lower than the savings from buying things more cheaply in bulk or if you have a special cheap or free source for such fresh food and
2) that roughly 50-300% extra time in the freezer compared to without vacuum sealing for using up this bulk food is really needed.

In my opinion it makes no sense otherwise and from an economic and organizational point of view to practice vacuum sealing for normal pantry purposes, and often extra so given the (usually limited) amount of food a private household goes through, even for a family of 3-5 people.

- A very important **WARNING** to hammer a point home I made already, but there is a lot of false information floating around about this on the internet and even in some marketing, and some people have some very dangerous ideas about vacuum sealing, and I want to be crystal clear about this point:
    - Vacuum-sealed food is **not sterile**, as you absolutely still have microorganisms in there with your food.
    - Vacuum-sealed food is **not shelf-stable** if it wasn't already.
    - Vacuum sealing is **not the same as canning**.

  The vacuum or rather negative pressure just reduces available oxygen in the container and no new oxygen and moisture can get in. This will reduce the rate of oxidation (rancidity etc.) and things going stale, but don't count on it stopping any microbes – which yes, will be in the container – from doing their thing. It might or might not slow them down a bit, but you simply can't count on this if you want to stay on the safe side of food storage and food consumption.
  This is why it is downright dangerous to "store" food that can spoil at room temperature in any vacuum-sealed container and think it will stay good much longer, even though you might manage a day or two extra in some special cases – and in others end up with spoiled food or even serious food poisoning if you don't detect the spoilage, including at worst Botulism.

It is especially dangerous if you actually store moist, low-acid food in a vacuum-sealed container, due to what I have to and keep mentioning because it cannot be mentioned enough: **Clostridium botulinum**, an anaerobic bacterium, creates a toxin that is **lethal**. It needs a low-acid, sufficiently moist and warm, low- or no-oxygen environment with food – proteins above all – to become active and create its toxin, which can kill you if you consume just nanograms of it and don't receive sufficient treatment fast enough.
Vacuum sealing and storing low-acid, moist, non-shelf-stable food without proper sterilization, and then letting such a container sit at room temperature long enough, can give any potentially present C. botulinum the environment and time it needs to produce its dangerous toxin. Remember: you can neither see, smell, nor taste contamination with C. botulinum or its toxin.
Under perfect conditions C. botulinum can "do its toxic thing" within a few days, or even just a couple of hours. It does so under conditions it will usually never encounter in nature in ways that could become a problem for humans – but with vacuum sealing and storing the right = wrong kind of (wet, non-shelf-stable) food at room temperature, you might just create the perfect conditions for exactly that.
So please, don't mess around with this, it's really not that hard to avoid the few things about canning, vacuum sealing, and general food storage that can lead to the worldwide fairly rare cases of botulism poisoning or even death.

My Take (for non-prepping purposes): Personally I consider vacuum sealing food for the fridge in plastic bags or glass jars pointless, and if you mess up the refrigeration even dangerous. Otherwise, if you use plastic bags, it's just more trash, and spending money for little real gain and a bit more risk.
For the freezer it can be useful, but more plastic bags means more trash and more money you spend on something you can probably handle for your "freezer needs" just fine without such methods, as long as you rotate everything in the freezer within 6-12 months. Sticking with reusable freezer boxes is usually more efficient by comparison. There can be specific circumstances though even for a private household, and without running a freezer with 1-2+ years worth of content, in which it might make sense to vacuum-seal certain freezer goods. YMMV.
With dry food, it has its uses: For the normal small home pantry where food rarely stays around for more than half a year to a year, it's usually not needed for most food items. Serious preppers who store food for many years on the other hand are a good use case, as they fill really big bags and then don't touch them for years – but what makes sense in one context makes zero sense in another, just like getting the most fancy sports equipment used by professional athletes is overkill if you just do some light exercises.
Generally for shelf-stable dry food I'd only consider vacuum sealing with mylar / plastic bags if you really buy larger amounts of food and store it for longer periods of time (many years!), or might have a larger family and are never entirely sure which parts of your pantry might stay around for longer or which get used up faster. With glass jars though, if you have enough of them anyway, vacuum-sealing them with dry, shelf-stable food inside can be a neat way to prolong the shelf life and preserve the aroma and nutrients of your dry food.

Generally speaking, these types of food benefit the most from vacuum sealing for a pantry:

- **Nuts & Seeds**: Oxidation turning them rancid and/or stale can be a real issue if you buy them bulk. Dividing the bulk you bought into reasonable portions in packages / jars, each tending to last you 2-3 or at most up to 6 months can keep the quality of these types of food better than unsealed glass jars and plastic containers. You can expect the shelf life to be expanded by a factor of 2 to 4.
- **Coffee & Tea**: If you buy them in already vacuum-sealed bags and use them up within a reasonable time, it's pointless. If you buy bulk, or have very high quality types, vacuum sealing can keep the aroma significantly longer – jars are good for that.
- **Spices & Herbs**: If you buy these bulk, especially if already pulverized, and don't mind sealing them into smaller packages or jars (portions you might use up within 6-12 months, max), you can significantly counter rancidity, loss of flavor, them getting stale etc., but you might have to think about the extra price for each vacuum-sealing in plastic bags if that's what you use, which can add up – so do your own math on whether it might be cheaper in the end to buy these in smaller, aroma-sealing bags and maybe get a discount for buying a larger quantity of said smaller bags. If you have enough small jars that's of course a non-issue.
- **Cookies & other dried goods**: They lose texture or can go stale from moisture, and if you vacuum-seal cookies, crackers, crispy bread, rusk etc. (without crumbling them in the process! no issue with jars, but it can be with bags) they can stay crispy and retain most of their aroma way longer. With chocolate it can also help to a degree against fat bloom (see below under chocolate about that) and delay loss of aroma, but storing at correct (not too high) temperature matters more.
- **Long-lasting provision**: This only makes sense if you really stock a lot of rice, flour, dry legumes, oatmeal and other shelf-stable staples, buying them in bulk and then sealing them into smaller packages / jars. Their biggest enemies tend to be moisture and pests, if it is things like oatmeal or other things with a higher fat content also oxidation – all things you can counter for a longer time with vacuum sealing. Of course it is also an extra protection against pests, just don't skip the firm outer containers if you use bags. So if you have a large family, and/or want to stock up on these things for a few years with some really big bags that are way cheaper than a lot of smaller packages, it can be cheaper and marginally enhance shelf life, otherwise it's probably not worth the effort.

As you can see from this list, vacuum-sealing with plastic or mylar bags can make sense if you run a pantry on a time scale of years, and if buying in bulk is so much cheaper it offsets the sealing costs if you use bags. For a normal pantry with food rotating within months to maybe a year or for some food with a long shelf life even 2-3 years of time horizon, the costs rarely justify the minimal gains. The food simply won't sit around long enough for oxidation and moisture to become enough of a problem to justify vacuum sealing.
If you do that kind of pantry (like what this document is mostly about), you can simply stick with maintaining good storage practice with airtight plastic, metal and glass containers and maybe do a little bit vacuum-sealing with glass jars if you are an aroma aficionado, as otherwise this kind of vacuum sealing is more an expensive, fancy extra than anything truly worthwhile
.

The only exceptions for doing it with plastic / mylar bags are if 1) you want to maintain really top notch near-perfect aroma with your extra food supplies, and are willing to pay extra for it, or 2) if you want to start running kinda prepper levels of food storage with many years' worth of rotating food and keeping said food at best quality.
If you know how to, and do get the implements / machine to vacuum seal dry food in reusable glass jars, that's a different beast and can be pretty amazing – enhancing not just the real shelf life of your dry food, but also slowing down the degradation of flavor, nutrients and texture of this food stored in vacuum sealed glass jars.

How to vacuum-seal any suitable glass jar: There are simple little handheld devices that can vacuum-seal mason jars; these use a "ring" and a "plate" as separate parts for the complete lid. If the lid of a jar is a single piece of metal, those devices won't work. You can use a trick though: Some devices for vacuum-sealing plastic / mylar bags have an extra hose and attachment to also seal mason jars and other suitable containers.

The latter are usually simply flat plates with some kind of silicone or similar layer underneath, and a knob on top to release the "vacuum" (negative pressure) when you want to open the thus-sealed container. These flat plate lids can be placed on any container that can withstand negative pressure (sturdy enough, like glass jars), and have an even, smooth rim.
The Trick: Don't use the flat plate lid directly on the jar you want to vacuum-seal. Instead you need a larger container you can fit the glass jar you want to vacuum-seal inside. Place the jar in the larger container, and seal the larger container with the flat plate lid. The negative pressure in the larger container pulls the air out of the smaller jar as well, thus vacuum-sealing it too. Make sure the larger container can actually withstand this process before you try.
After that you remove the flat plate lid from the larger container, and the jar you actually wanted to vacuum-seal should now show the typical signs of a vacuum seal, meaning the metal lid is slightly dented inward, and when you want to open it, this will require some more strength and create the typical "pop" sound like with any vacuum-sealed jar.

You can repeat this process over and over again, although I'd guess over time you might wear out the metal lid of your glass jar with this. So it's probably better to not go through the hassle every time you want to grab a cookie or a few nuts & seeds, and instead just have your storage jars sealed that way with your additional supplies, while keeping the smaller jars with nuts & seeds, herbs & spices as well as your cookie jar unsealed for easy and frequent access.

My advice: Watch for a couple of months to a year or two how much food you actually have to throw away, or wish to have at better remaining quality when you get to use it. If it's little to no loss, and you don't plan to expand your pantry into something that has provisions meant to last multiple years or even decades, it's probably not worth getting a vacuum-sealing device, unless you just want to have fun with it. At most, you can eventually consider doing some vacuum sealing of properly dry food in reusable glass jars simply for retaining best quality a bit longer, after you have properly informed yourself about this method.

DIY air-reduced packaging

If you want to keep dry goods fresh longer, there is a simple trick that combines the best of plastic or even better mylar bags with “DIY partial vacuum packing”. It works with any plastic or mylar bag that has a sturdy enough zip-lock seal. The procedure is pretty simple in theory, but you might need a bit of experimenting and experience, until you get it done really well.

1. Get yourself a sturdy straw, like you would for drinking.
2. Fill the bag with the dry food, but not too full, and lay the bag carefully flat on a suitable surface like a table or counter.
3. Put the straw in one corner of the bag, and zip the bag as closed as you can, up to the small corner with the straw.
4. Make sure the straw doesn't sit too deep in the bag, just deep enough for what follows.
5. Press a good bit of the air out of the bag with your hand(s), without spilling any of the dry material in there out or onto the zip-lock line. That’s why filling the bag too much can get problematic.
6. Place your hand over the area around the straw to keep the rest of the bag from filling up with air again, and to keep the straw in place.
7. Now suck as much of the remaining air out of the bag as possible, using your mouth.
8. Caveat: If it is powdered spices or other dried goods, of course make sure you don’t end up inhaling it. You can partially prevent that by putting a tiny plastic bag around the end of the straw that sits inside the bag (and will stay there). Don't inhale too strongly all at once, or you might suck content up through the straw!
9. Caveat: Take care not to exhale into the bag during the process. Instead, press the bag held closed with your hand against the flat surface when you have to take another breath! Otherwise you might end up putting more moisture and microbes into the bag, the opposite of the desired effect.
10. As soon as you remove as much air from the bag as possible with the straw, while keeping your hand firmly on the bag to keep new air from getting in, quickly pull the straw out from under your hand, and seal the zip-lock against the flat surface with your other hand.
11. Alternative: You can also do this with the bag standing upright, if you are nimble enough, which in some situations can be even easier. You just have to adjust accordingly.

This is a low-tech, easy method which, if you get the hang of it, can give you something like "80% for 20% effort" (don’t expect these exact numbers of course), compared to real vacuum packaging. You do not remove all air & moisture of course, but enough to reduce the amount of oxidation and other chemical reactions to happen. The first weeks of air exposure tend to do the most damage to dry goods. That’s when oxidation and moisture absorption are most active. With this method you simply reduce that initial impact, but don’t entirely negate it.
If you now store bags like these also in airtight boxes or jars with as little air remaining in them as possible, you reduce the amount of air & moisture even further which can get to these plastic or mylar bags. For this reason several smaller bags might be better than one big bag. People underestimate this: Over time, small amounts of air gradually seep through zip-locks, just as the seals of other vacuum-packaged bags, unless they are really very well done / high grade.

If you do this method well, and store your dry goods in such bags otherwise cool and dark, you can easily get quality and shelf life out of them that might rival or surpass a poorly vacuum packaged bag that is left at room temperature. Don’t expect miracles from this DIY method, but if you do it well it will have an impact. It might take a few tries before you get it reliably right, but once you do, it saves you the price of a vacuum sealing device & special bags, and extra hassle – just like our grannies once did, and did well, for storing things 1-2 years at decent quality. For “household pantries, 1-2 years storage time” it can be absolutely sufficient.

Metal Containers

Only use metal containers that are definitely food grade – most random ones are not. Be very careful with metal containers sold online or offline for cheap as food storage containers. Many turn out to corrode or react faster than you'd expect. Chemical interaction with or metal contamination from such containers can happen, which might be harmless or a real health risk, all the more so with frequent consumption of such invisibly contaminated food.
Proper food grade metal containers will never interact in any meaningful way with any normal food, or they have specific labels that tell you what food you cannot store in them (like some are not resistant against acid, so don’t store vinegar, fruit juices, tomato soup etc. in them).

By and large, there are few reasons to store food in containers made out of metal, except for aesthetic ones, or because it is particularly sturdy while keeping the content away from light. There are round metal containers with usually plastic (sometimes wooden or glass) lids and a silicone ring, making them relatively or very airtight – especially those with a clip-lock (lever closure) to really push the lid fully down.

If they are proper, good quality food grade materials, they can be convenient to store food and other ingredients you want to access often but store relatively airtight, such as your current supply of coffee, tea, dried goods like oatmeal – or as a cookie jar. The more exposure to light, air and moisture negatively affect the aroma & quality of food, the more these metal containers can make sense for your current supplies you keep at hand.
The really good food grade ones are not cheap though – if you find cheap ones, remember that you get what you pay for, and most likely the clip-lock is flimsy, the silicone seal questionable, and the metal so reactive with various types of food that you'd better use it only to store some DIY supplies, not something you want to eat or drink. Sometimes you might luck out though and find some high quality ones at garage sales or thrift stores for a bargain.
A common telltale sign of questionable metal containers like this: They look nice and shiny on the outside but dull on the inside, and often have a pungent or otherwise very noticeable metallic scent – especially on the inside. Some are also simply too shiny – you'll know it when you see it..

If you want something reasonably airtight and dark, easy for daily use, and not pay a pretty penny for it, you might be better off with using glass jars, and making some kind of cover for the jar as a little DIY project – like a simple sleeve of paper or opaque plastic – which you can remove and toss if it ever gets too dirty.

Be careful with metal boxes that have no airtight lid, meaning it's just metal on metal when they close, like many boxes for cookies and similar goods. They can be cute and convenient for easy access, like to your cookies. Unfortunately, moths and other pests that love your cookies too might be able to squeeze through tiny gaps in those boxes, and then you are eventually greeted by grubs when you open the box. You might be surprised what they can get through when really determined, and they are by default really determined.
Oh and btw, yes, the classic tea caddy, if not really good quality with a lid that sits very firmly all around, including at any hinges? Moths can get into those, even with a completely closed lid. Speaking from experience here and oh boy, did it take a while to get the flour moth infestation under control after I discovered this the hard way…

The Basics of your Pantry

The following are things one finds in many well-run personal pantries, because they have a good or even extremely long shelf life and, combined in the right way, allow for making a wide variety of meals that keep you not just nourished but happy. Do not get any of these things if you do not like them and won't eat them, get the things you will use anyway over time (see “Basic Rules” above).
If there are any items you really really like that are not on this list, check their shelf life, whether there are long-lasting alternatives, and adapt this list accordingly.

Keep two important things in mind if you run your private pantry also with an eye for general crisis preparedness and emergencies:

1. There are many staples of a well-stocked pantry that require a lot of water, like rice, pasta, dried legumes, or pseudo-grains (which need to be boiled). If you are concerned about (municipal) water supply disruptions in your area, these cannot be counted as part of your emergency food supplies unless you also have enough water stored for cooking them, or other means to obtain clean water. The latter usually requires not just a water source that is not easily disrupted, but also the means for proper water filtration and disinfection. If you do not have the means, or do not want to go through such lengths, it might be wiser to stick with food that doesn’t need much water.
2. If you are concerned about the electricity grid going down at times, and you do not have the means to cook without electricity (or not for long), then anything that requires cooking cannot be counted as part of your "emergency supplies". In that case, maybe stick with things that require no heat for preparation. Most notable here are properly canned foods, things that just need soaking in water or oil, or things that can be eaten without any preparation.

The condensed list

First I give you a direct list of potential options of things or categories of things that are shelf-stable, then a long list of reasons why for each item:

- Rice
- Pasta / Noodles
- Potato powder/flakes (100%)
- Starch
- Oatmeal
- Flour & Grains & Cereals
- Legumes (lentils/beans/(chick)peas)
- Texturized plant protein (soy, peas)
- Fish & meat, canned or dried
- Whole egg powder
- Cheese, powdered or canned
- Milk, UHT, condensed or powdered
- Protein powder (Whey, Soy, Pea etc)
- Tempeh, dried or canned
- Canned coconut milk
- Oil (Rapeseed, Olive, high-oleic sunflower, maybe Linseed) & Ghee
- Canned Butter
- Nuts & Seeds
- Peanut butter / flour
- Veggies, canned or dried
- Mushrooms, canned or dried
- Pureed tomatoes (canned)
- Tomato paste (tube, can etc.)

- Fruits & berries (canned, dried, spray-dried)
- Packaged Meals
- Vitamin C (powder or pills)
- Nutritional supplements as needed
- Herbs & Spices, further seasoning & flavoring as you like, most of all bouillon cubes / powder
- Honey & Sugar + other sweeteners
- Salt (for more than you might think)
- Vinegar (ditto)
- Baking Soda (100% pure)
- Other Baking Supplies
- Shelf-stable Juice / Smoothies
- Treats for your soul, like coffee, tea, candy, chocolate, cookies
- Water

Shorter shelf life shelf-stable as long as properly stored:

- Bread with longer shelf life
- Apples, if stored properly
- Potatoes if you can store them well
- Onions if you can store them well
- Dry Yeast, if you bake or otherwise use it.

Rice

Rice has an incredibly long shelf life if stored properly, decent nutritional value for a grain, and together with legumes can be the foundation for a filling, nourishing meal. Keep in mind that you need a lot of water to boil it. There are many types of rice for various uses, so inform yourself if interested, or simply stick with white parboiled (long grain) rice for its versatility.

Rice has traditionally been an excellent way to ensure enough protein intake when combined with legumes, as each on its own lacks some of the 9 essential amino acids we need long-term to function well. Note you do not have to consume them in the same meal, as long as you have both in sufficient amounts in your diet, and if little to no animal products or other, rare sources of all 9 essential amino acids are consumed, like e.g. soy beans / soy protein.
Wheat also works well in this regard, but not all other grains. Maize/corn is a special case: Without nixtamalization, it is a poor source of tryptophan and niacin (Vitamin B3). At worst it can lead to Pellagra if you'd try to rely long-term just on Legumes + untreated Maize/Corn, as most legumes contain some but long term sometimes not enough niacin or tryptophane as one of the 9 essential amino acids. Humans around the world and through the ages have survived well though on just these two staples (Rice or Wheat + Legumes) with little to no meat, fish, eggs or dairy products – not always happily, but well enough.

Stored properly – dry, in airtight containers, and away from light – it can stay good not just for years or decades, it can outlast you: Grains like rice have been found stored under such conditions in centuries-old graves, and while it probably wouldn't have tasted good anymore, it was still (very) technically "edible". The biggest issue is usually oxidation, leading to the rice going rancid. Be aware that brown rice spoils faster in this regard due to higher oil content. For best nutritional value and shelf life, usually white parboiled rice is the best choice.

Pasta / Noodles

Blocks of ramen and other instant-noodles can be nice to just quickly prepare with hot water, but be careful with those that come as ready-to-eat meals: they often contain fats and other (often less than ideal) ingredients that can spoil faster than plain ramen noodles with nothing added. Normal dry pasta of course is also a good option to have in your pantry.

Classic pasta, low moisture, nearly fat free and with no other ingredients that could spoil (like in some types, egg), has a fantastic shelf life. If stored properly – dry and airtight in its original packaging, maybe with additional airtight containers – it is easily good to eat for 5-10 years. If stored optimally, even 20 years and more are possible, as long as no pests, moisture or air can get into the container to trigger spoiling reactions. Over time it might become a bit more "flat" in taste, the texture might suffer minimally, and it might need a bit longer to cook – but that's about it. As it doesn't have many nutrients beyond carbs and a bit of protein to begin with, it also can't lose much.
Don't get the stuff with eggs in it if you want a long shelf life – pure wheat only. Pure it has an incredibly long shelf life stored properly, while with eggs the shelf life is slightly lowered. Note that dry, shelf-stable noodles with egg can also have a decent shelf life – just not as long (for a normal pantry with a time horizon of months to a year, mostly irrelevant).

Note that wheat – and yes, that includes noodles made from wheat (or any other wheat products) – is a good alternative to rice when combined with legumes, if you want to create a complete protein profile for your diet without any animal products and/or soy beans (& products). Rice and wheat each have their slight benefits and minor drawbacks, but both work well in terms of "with legumes you can get your 9 essential amino acids covered" (see also above under Rice).

Flour & Grains & Cereals

Wheat Flour is a common must-have for anyone who likes to bake or make pancakes and other recipes involving such. The nutritional value of wheat flour is not overly high – basically on par with pasta: Good together with legumes if consumed in sufficient amounts to cover your protein needs without any animal products, but that's about it, as mostly it's just simple carbs.

Flour is fickle when it comes to shelf life, and storage conditions make a huge difference. The best-by date for plain white flour might indicate 1-2 years. If stored truly dry, dark, away from pests and air contact, it may stay "fine" for 2-3 years, in some cases up to 3-5 years, but don't count on that. Poorly stored it can go rancid in just a couple of months. Once it smells truly stale, rancid, moldy, or pests got in, there is nothing to salvage – and many pests love flour. For whole grain flour I wouldn't count on more than at best 6 months, unless frozen.
With flour I have to add more of a special caveat regarding "shelf life potential" than with other dry goods like rice or legumes: Yes, wheat flour can be "okay for consumption" within the above time frames. I have used flour that was 5+ years old and it was not perfectly fine – merely "okay…ish". And I have seen flour, even well-stored, that already smelled horribly stale and tasted like soapy saw dust after just half a year.

Wheat flour is incredibly sensitive to moisture and also prone to oxidation (meaning: going rancid). If your home and storage area is just a bit too humid and you can't store your flour really perfectly airtight, these storage conditions can ruin it faster than many other types of shelf-stable food. "Okay for consumption for 1-2 years, maybe even 5+ years" doesn't mean it will still taste good. You might very well end up after just half a year to a year with something that tastes like sawdust with a hint of soap, paint thinner and/or rancid oils, or it can be okay after 5+ years.

Realistically, even for a private pantry at "tier 3" with 6-12 months with provisions or even a bit more into the next year, I wouldn't stock flour for more than 6 months. Beyond 6 months, storage conditions have to be really good; and beyond 12 months, the odds get increasingly stacked against you and that flour. Of course if you store flour vacuum sealed or airtight in a freezer, you are effectively stopping the clock on its shelf life. For wholegrain flour I would only get enough to last for a few months, as it goes rancid very easily and pretty fast.

If you are really into long-term storage of flour significantly more than a year, I recommend getting wheat berries rather than flour, and a small mill to grind your own flour (see below). The fickle shelf life of flour is the main reason why humans have stored their wheat supplies for millennia not as flour, but as wheat berries, and the emergency provisions of nations which use wheat still follow this practice for the same reasons. Remember, if you want to go for "emergency preparedness", to also have the means to do so without electricity – meaning a hand-powered flour mill. Yes, that's a lot of work (see below).

Nutritionally, much the same as for wheat flour can be said about things like **durum semolina**. For its shelf life, you can expect 2-3 years if stored properly, up to 3-5 years possible, with optimal storage conditions even 10+ years might be doable. It tends to store a bit better than wheat flour, as it does not oxidize as fast, nor does it soak up moisture as crazily fast as flour. Its quality will nonetheless degrade with each passing year.
Such coarser wheat products are nutritionally about as good or rather bad as pasta: There are almost no micronutrients left, and you are mainly eating easily digested carbs and a bit of protein. This doesn't mean don't eat such wheat products, just be aware it gives you calories, a bit of protein, and little else – plus it has a high glycemic index.

Bulgur, also made from wheat but pre-boiled and dried again, still retains more of the whole grain, and thus has a little bit more fiber and a bit more minerals than plain white flour or semolina. This comes at the cost of a somewhat shorter shelf life, as more fat means more that can go rancid.
Generally it can stay fine for 1-2 years, and up to 3 years are possible.After that it most likely already is, or will soon degrade, beyond salvaging. Watch for any stale, rancid, foul, or otherwise unpleasant smell, and toss it if you detect any. Of course, if it still looks, smells and tastes fine, it might still be good even beyond those 3 years.

Couscous like it is commonly sold these days in stores is also pre-steamed and then dried again, giving it a similar shelf life as bulgur.

Wheat Berries are the whole wheat grain without the husk, and have a surprisingly good nutritional value. A lot depends on the exact type, but usually they contain a nice amount of protein and various minerals, and of course also lots of carbs / starch. They are digested not as fast as plain flour (products) thanks to the higher amount of dietary fiber.
Wheat berries can be cooked or even puffed and otherwise used for a variety of preparation methods. If you have a little flour mill you can of course also make your own whole grain semolina or flour from them.
You can also consider wheat berries an equivalent to rice when eaten in combination with legumes to provide you with the protein you need, as you might otherwise get from animal products or things like texturized plant protein (most of all soy).
Properly stored – dry, airtight, dark, and away from pests – wheat berries have an incredibly long shelf life of many years if not a few decades.

Instant meals made mainly from dried flour or grain products – often with additional flavorings and/or preservatives – like **instant porridge** (besides the classic oatmeal version) can technically also fall under this category , as an easier "instant" version of making porridge from wheat berries or other grains.

About grinding your own flour: Remember, if you want to grind your own flour or semolina, and you want to be prepared for when the power goes down, you need something you can use without electricity, unless you have a massive off-grid setup for your power supply. Otherwise you'll need a hand-powered mill – and if you've ever used one, you'll know why humans so early on began grinding their flour by other means than by hand. Additionally you need a fitting sieve if you want really fine flour that at least somewhat resembles the one you are used to, or you will be disappointed.
If you don’t want to commit more resources right away (grain mills can be pretty expensive, decent ones usually start at 100 bucks or more), and have a hand-powered coffee grinder, you can give it a first try with that. Keep in mind that producing the same amount of flour with a coffee grinder is more work than with a specialized flour grinder. It will also create a more coarse, uneven flour than you are probably used to, and you have to clean it afterward.
Don't use your food processor for grinding flour unless it is really designed for that – some manufacturers claim theirs are, but in reality the wheat will instead grind down the food processor pretty fast. Hard wheat berries are a different beast to grind than most other things food processors are made for.

If you don’t know it yet, inform yourself about the differences between the different types of wheat berries and what they and their flour are good for, how much it really cost and how much work it is (spoilers: a lot, but not gargantuan) to mill your own flour, so you won't be disappointed real fast. Of course you can also turn things like rye, spelt, and oats – or the grains and pseudo grains mentioned below – into flour, or even legumes.

Keep in mind that the flour you produce this way is in most cases whole grain flour, so it will have a shorter shelf life than the superfine flour you might be used to, but it is more nutritious.

There is a wide variety of **other grains and pseudo grains** you might enjoy cooking with, like **Quinoa**, **Amaranth**, **Millet** or **Buckwheat**.
Most have a shelf life of at least 2-3 years, and some with lower fat content even up to 3-5 years or more, those with higher fat content as little as 1-2 years. Perfect storage conditions can lead to even longer shelf-life, but don't count on that. If they smell rancid, stale or foul / moldy, it's time to toss them. Their shorter shelf life aside, they all have decent (like millet) to very good protein profiles (like quinoa, amaranth), and some contain a decent amount of minerals. They can be used much like rice, and for many also in their own traditional recipes.
Quinoa stands out as very rich in protein for a grain, and also offers you the entire profile of essential amino acids you need. It is a little "weak" in terms of leucine, but only slightly. You could survive just fine for your protein intake just on quinoa, but you would need a lot of quinoa for that (close to a pound per day!), as it is still mostly carbs, not protein. Mixing it with legumes of course will increase your protein intake further, and legumes tend to be richer in leucine, too. Keep all that in mind as you plan your nutrition and pantry, otherwise consider other sources like soy protein and animal products as your better options for easy, dense protein intake.
Buckwheat as a whole grain also falls into this category, and stands out with a lot of dietary fiber and important minerals, some vitamins and some bioactive compounds, making it a very healthy food staple if you like to use it.

Corn / Maize is not just delicious to many if eaten boiled or even from the cob, or turned into popcorn, it can also be ground into a slightly more coarse type of flour, aka cornmeal. Thoroughly dried, you can expect a shelf life of around 2-3 years.
Cooking dried corn requires overnight soaking first though, followed by a longer cooking time. Inform yourself how to do it properly if interested, just as about the different variants of corn in existence if you have different options to choose from.
Cornmeal / corn flour is a staple in some countries akin to wheat or rice flour in others. The really fine variants can often be used interchangeably in similar recipes, as long as you don't need the elasticity and potential for fluffiness that wheat offers for classic bread and cakes – thanks to the gluten that corn flour lacks but wheat has. There are recipes for overcoming the more compact but "crumbly" nature of corn flour. Good examples are tortillas (made from Masa harina) or some types of cornbread (which can contain wheat flour, or other alternatives).
A major benefit for anyone who is gluten intolerant (and thus probably knows this already): truly pure cornmeal certified as such is gluten-free.
Please be aware if you are interested in long-term prepping: For long-term nutrition, untreated corn or cornmeal without other sources of niacin or tryptophan is not sufficient to sustain you the way rice or wheat combined with legumes can. Without nixtamalization and/or an otherwise sufficiently varied diet, such a relative mono-diet of untreated corn can lead at worst to very un-fun Pellagra.

More coarse and boiled cornmeal is known in Europe and parts of South America (and beyond) as **Polenta**, which takes quite a while and a lot of stirring to make. In some countries pre-boiled instant Polenta can be gotten, which takes mere minutes to make. Think of instant polenta as the bulgur or couscous of cornmeal. If you like porridges and corn, but don't like a lot of cooking (or have to get things together fast and easy), instant polenta can be one of various good additions to your private pantry.

Polenta by itself obviously tastes just like corn(meal), but you can easily season it with whatever you like, from just a bit of bouillon powder or salt to various herbs & spices, and a bit of oil is always recommended to make it more nutritious and flavorful. Add some texturized plant protein pellets (remember to add extra water for them, or pre-soak them) or a bit of spam or bacon, and you end up with a simple type of highly variable comfort food, much like you can do all kinds of things with rice or (mashed) potatoes.

A major drawback of cornmeal is its shorter shelf life compared to wheat flour. The maize germ contains a significant amount of oil. If the germ is not removed, you end up with a flour more prone to going rancid than wheat – any signs of that (smell, taste), or smelling or tasting bitter, and you have to toss it. Depending on how refined cornmeal is, the shelf life can be as 6-12 months or at best even a few years under optimal storage conditions. I wouldn't count on it though, as oxygen and moisture do their work inevitably. Without removing the oil from the flour, most cornmeal goes rancid within 3-6 months.
Coarse cornmeal like that used for polenta tends to have about 50% longer shelf life; if refined (oil removed), it might stay good even longer. Instant polenta is a different beast: Due to the processing it tends to be closer in shelf life to normal, refined cornmeal, and is a bit more sensitive to oxidation (meaning it can go rancid faster).

Cereals also belong to this category, and have the benefit of no cooking needed. This ranges from your favorite cornflakes or other grain flakes to mixtures of oatmeal, puffed or otherwise prepared grains, sometimes mixed with other things like nuts or dried fruits.
Shelf life varies a lot for cereals. In general they follow the same principles as all grains: The higher the fat content, the faster it might go rancid. Wholegrain is more nutritious, but also can go rancid a bit faster, and so do many nuts. Added dried fruits lose aroma and nutrients over time. "Store dry, cool and dark", plus away from pests of course also applies here. Flour moths in particular utterly love this stuff, so I highly recommend you store even your cereal you use for regular consumption in a "moth-safe" container.

Oatmeal

Sounds boring, but with the right combination of other staples oatmeal can be extremely flexible to make a wide variety of meals more nutritious, not just as your standard porridge, or mixed into your yoghurt, or as part of your morning cereals. Sprinkle some into a stew and it becomes more hearty, soak with some eggs (or dried whole egg powder mixed with water) and fry in a pan like a "thick oaty omelette", and with a dip of your choice you get a nourishing, tasty meal. You can even bake bread from oatmeal.

Properly stored oatmeal also has a pretty long shelf life for a "whole grain". Look into which types of oatmeal are best for what purpose and stock accordingly for your needs and desires. Kept dry, dark and in airtight containers, the shelf life can easily reach 1-3 years depending on type and storage quality. After that, oatmeal starts losing flavor, nutrients, and quality, but can still be okay to eat even beyond that if stored optimally and if it's a lower-fat type.

You can recognize oatmeals slowly degrading by a slightly bitter or “soapy” taste, a smell a bit like old grease, and a less nutty flavor.These are not signs that the oatmeal has gone bad – the relatively high fat content for a grain (5-8%) can oxidize and go rancid, which is what causes those changes in smell and taste. In theory they could still be consumed in this state if you don’t mind the taste. Signs of true spoilage would be a distinctly foul, rotting, or extremely rancid odor, and taste to match.
They may not have the same long shelf life as rice, dry pasta, potato flakes, and other very dry, low-fat staples, but their outstanding nutritional qualities (fiber including the very healthy beta-glucan, a variety of nutrients, and a relatively high amount of protein for grains) and wide range of use cases make them a common staple in many pantries and for many in their individual nutrition, as long as you enjoy their taste and versatility.

Their main drawback is phytic acid, which can hinder the absorption of certain minerals from your food. You can counter this effect at least somewhat by soaking your oatmeal overnight in water or milk with a little splash of vinegar or lemon juice added to the water (or milk, or milk powder + water), or in a bit of yoghurt – the mild acidity of the vinegar or yoghurt (and beginning fermentation) will deactivate the phytic acid to a degree.
In a pinch, soaking your oats for an hour at room temperature is better than nothing.

Note that phytic acid has its own series of health benefits though, including antioxidative properties, and can help regulate your blood sugar. So eating oats without soaking can be perfectly fine, you just have to be aware that you might not absorb as much iron and zinc (including from the oats themselves) or calcium (such as from the yoghurt or milk you prepare them with) as you normally would, and strike a good balance.
Boiling oats for porridge is another way to reduce phytic acid, but you have to discard most of the cooking water, as the phytic acid doesn't get inactivated, it merely seeps out of the oats into the water.
Consuming some vitamin C (fruits, veggies, or from a supplement) can also help to reduce the issue with phytic acid, though not entirely – and it has the added benefit that the iron in oats can be better absorbed by your body, as is the case with all plant-based iron.

Side note: “Overnight oats” in yoghurt with a teaspoon of linseed oil (rich in ALA for omega-3 acid) or in a pinch any other good oil, eaten in the morning with some fruit (or a vitamin C supplement) and maybe a handful of nuts & seeds keeps you sated for a very long time, while providing your body with a lot of what it needs to keep going. If you need more calories for being physically active, add a bit of honey to your “overnight oaty yoghurt” or eat a few dried dates with it. If you need more protein, and/or want to increase how this breakfast can keep you sated for a good while, add some protein powder, such as whey or soy protein. This meal gives your body dietary fiber to slow digestion and thus avoid the blood sugar rollercoaster, a nice amount of protein, some good fat, and enough slow-digested carbs, plus a variety of micro-nutrients.
If you have no yoghurt, in a pinch just water, some milk or whey or soy protein powder, and a bit of vinegar or another source of acidity mixed with your oats can give you something similar to yoghurt for this purpose, together with the other ingredients.

Potato powder

No dry milk or anything else added, just 100% pure potato powder / flakes, which you can toss into water, milk (powder), or any soup and have within minutes mashed potatoes, a thickened stew, or flavored mashed potatoes – no cooking needed. This powder or flakes are easy to digest, so even when your tummy is a bit upset, they are a good source of potassium, but otherwise their nutritional profile – beyond being a source of easily available carbs (= energy) – is limited, and they contain less fiber than other options. So consider them a very versatile addition to your pantry and to a variety of meals, but not a staple of your nutrition.

Properly stored dry in an airtight container, it has a very long shelf life – easily 3–5 years, potentially even 5–10 years or more. Signs of it going bad are usually easy enough to detect: it will smell or taste stale, foul, or moldy. This is almost always caused by moisture getting in.

I don't recommend getting those versions with milk and often other things like emulsifiers already added, as they tend to have a lower shelf life, and are a bit less versatile for use than 100% pure potato powder/flakes. You can always add a bit of milk powder to your potato powder, and with water have the kind of mashed potatoes (with milk) you might prefer, plus any seasonings you like.

Starch

Starch made from corn (corn starch is probably the most common type world wide), wheat, rice, tapioca (which offers a very particular type of texture) or similar plants is a staple for a great number of recipes, from sauces to “fake cheese” made with oil, liquid and nutritional yeast flakes. It is a thickening, binding and stabilizing agent, and adds structure to baked goods. For certain things, especially baking recipes or “fake cheese”, starch to my knowledge is difficult to substitute. At best you can try with plain white flour, which mostly consists of starch anyway.

Starch can also be an important part of the "comfort food" section of your pantry, which is not something to be ignored – as something as simple as **fake gravy** shows: Mix 1 part (corn) starch with 1–2 parts cold water into a smooth slurry (the less water, the thicker the gravy). Heat some water with a bit of bouillon in a pan, and slowly stir in the slurry. It thickens fast into a gravy-like sauce.
You can flavor and enhance it additionally with a bit of butter, ghee or cooking oil, which makes it taste even more like gravy instead of soup thickener; a bit of onion and/or garlic powder for a good base flavor; a bit of miso, nutritional yeast flakes, yeast paste (marmite etc.) or a splash of soy sauce for additional umami (savory) taste; and a pinch of sugar (especially if caramelized first) or honey if you prefer the flavor balancing it adds. There you are, your self-made instant gravy from things that can be found in many well-maintained private pantries.

For some, starch is an absolute staple for their pantry, for others it is a nice extra to have but not really needed. For some recipes you can also replace starch with other things or simple tricks, for example: You can capture some of the water you used to boil pasta, as it already contains starch that has leached out of the noodles, and use it to make the pasta sauce.

Another example: For thickening sauces, often a much better choice than plain starch is Beurre manié / “flour butter”, which is simply equal parts butter and flour kneaded together and then whisked into the still-hot sauce. Beurre manié can also be well refrigerated or frozen in ready-portioned pieces, e.g. in an ice cube tray, then transferred to a container in the freezer. The example with beurre manié is also an example of how some of these alternatives require refrigeration for storage exceeding a few days, while starch itself is incredibly stable if properly stored.

Starch also has **other, non-food uses**, which makes it a pretty versatile thing to have in your pantry:

- **Glass cleaner**: Mix a tablespoon each of vinegar and starch with two cups of water, and use it in a spray bottle as you would any window or glass cleaner. The vinegar alone works great,the starch acts as a very mild abrasive and soaking agent to help clean the surface even better.
- **Cleaning fabrics**: Be it carpet, plushies, blankets or anything else, sprinkle starch onto it, let it sit for about half an hour, then vacuum or thoroughly shake it out. If needed, finish off with a damp cloth. You can get rid of a lot of odors and other things that bind with the starch and get removed along with it.
- **Stain remover** for oily stains. Sprinkle starch onto it, leave it for 10-15 minutes, then wipe it away – a good bit of the oil should be gone, and you can remove the remaining greasy film easier with normal soap / detergent. Also can work with grease stains on walls, rub a bit of starch over it until the stain comes off. For other stains you can try a thick paste of water and starch, and spread it on the spot. Let it dry, then vacuum it / shake it out, the starch should have soaked up a good bit of the stain. Repeat if needed, switch to something else if it does not work at all.
- To **reduce chafing** between skin and surfaces, given its very fine texture. Just put a bit thinly on the affected spot of your body. Don't do this if you think you might rub yourself raw regardless, as you don't want the mix of starch and sweat to create something icky on broken skin.
- **Helps to untie knots** that are hard to untangle, as the starch reduces the friction between fibers, be it shoelaces, cords or even hair (careful with the latter, see below).
- Some people praise it as a **dry shampoo**, not as great as a proper one, but if you sprinkle and rub it into your hair and brush it out, you can get some of the grease out of your hair, or also your pet’s fur. This is partially true, but be careful – and here is why I strongly advise against it: If your (or your pet’s) hair is too greasy, or you use too much starch, or there is a bit of moisture involved, you end up with a thick, icky mass you can barely brush out anymore, which makes everything even worse: itchy scalp, messy hair, and at worst even bacterial growth in the starch-grease mix. I would not recommend this, but mention it here to raise these red flags about this use. You might be better off with naturally greasy hair for a while until you can wash it again, rather than making it worse, or store some commercial dry shampoo if you want to have a “no water solution” for your preparedness kit.
  The same can be said about starch as a weak but functional **deodorant** thanks to its moisture-absorbing nature, or a replacement for **talcum** or **baby powder** to control body

moisture and increase grip, some even post recipes online that mix coconut oil with starch for deodorant. In these cases you can very easily end up with an icky paste that can clog your pores, and at worst creates a layer in which bacteria can grow all the better, leading to more skin irritation, not less.
In some historical contexts where starch was used in powder form to achieve a "noble pallor", anything from acne to constant skin irritation and itchy skin was a common problem, given how frequently and thickly it was used, and at worst could sometimes lead to skin infections. Mixing white lead with starch of course turbo-charged all kinds of problems from these powders....

- **WARNING**: Even though starch has some extra uses, the use for “cosmetic & body cleaning” purposes is at best very questionable. Even if you really want to experiment with this at your own risk, do not use it on open wounds or any places you think could get rubbed raw or anything like that. If starch gets into open wounds, even just surface skin abrasions, it can act as food for bacteria and thus increase the chance for the wound to become infected!

Legumes

Dried legumes like **lentils**, **chickpeas**, **peas** or **beans** have years or decades of shelf life if stored properly, and ready-to-eat cooked in cans or glass jars, they also have at least many years of shelf life.
As mentioned, rice, wheat and other methionin-rich grains + legumes are the foundation for filling, nourishing recipes that create with a bit of oil/fat the foundation for a wide variety of meals, with a good balance of the 9 essential amino acids, just as in general a good balance of protein + carbs + fat. Legumes are for good reason a staple for vegetarians and even vegans to get a nice chunk of their protein.

If you don't know it already, inform yourself how to properly prepare dried legumes depending on their type – red lentils are a different beast from dried kidney beans if you want to get the most of them when eating. If they are really old they can stay hard when you try to cook them, but a bit of baking soda tends to fix that issue, and also generally shorten boiling time – after you rinsed off the soaking water with the baking soda (again, you can read up on the details elsewhere if interested). Be careful with the baking soda, too much and everything tastes very soapy, so really use just a pinch, and rather add a little bit more later if the legumes still won’t soften. If you have the means, you can also grind them – even older ones – into a coarse flour, which works great as a thickener in stews or other liquids.

The above is of course mostly about dried legumes, but you can skip all that with **canned legumes** in metal cans or glass jars (the latter great to reuse elsewhere). The benefit of those is of course no need anymore to boil your legumes, you can eat them in theory right out of the can/jar. The drawback is a shorter shelf life. “Shorter” is relative here, now not measured in decades like with dried legumes, but still easily 2–5 years, under good conditions a decade. That kind of still very long shelf life makes “shorter” irrelevant for any normal personal pantry with a year or at most maybe 2-3 years as the normal maximum time horizon.

They tend to be more expensive than dried legumes though, even if you buy those cans in bulk. If you buy them in glass jars and factor those in as a bonus, the cost/benefit analysis shifts, unless you're already so well stocked with glass jars that you don't need more. These glass jars, properly cleaned and sterilized can be used for future food storage or even home-canning after you properly learned how to do it.

A warning here again: Legumes are rich in protein, and thus ideal for Clostridium botulinum to grow on them in anaerobic conditions like you have in canned or vacuum-packaged food. They belong to the same "risk category" in this regard as meat or fish, so please know what you are doing if you want to home-can legumes, and be aware of how to mitigate the risks of botulism (see above about this under “Glass Jars / Mason Jars” -> following chapters).

A small word of warning about the liquid pre-boiled legumes come in (different from veggies – more on that below), and the cooking water used to boil dried legumes yourself: In the watery liquid you can find FODMAPs, phytic acid and small amounts of lectin that have seeped into it during the boiling process. FODMAPs can increase bloating and flatulence in some people and trigger other sensitivities. Phytic acid and lectin are anti-nutrients which can impede your body’s ability to absorb some nutrients, but can be deactivated with heat.
Lectin, if not deactivated by sufficient heat, can even be toxic in higher doses. As you boil legumes by default it does not pose any toxicological problems, but it is the reason why not to consume them raw. Sufficiently heated you can enjoy your legumes without concerns about lectin or phytic acid, and, unless you have a particular sensitivity to FODMAPs, without concerns about those either.
Technically the liquid you boil legumes in contains some nutrients, but you’d also consume some of the above substances with it. This is why using the liquid is not worth the drawbacks. The exception would be if you are in a situation where you need every bit of liquid you can get. In that case by all means drink the “legume water”. As long as it was properly boiled, it’s neither toxic nor so horribly "anti-nutritious" that you would have to worry about doing so for a short period with limited water / liquids supply.

Texturized Plant Protein

Dehydrated, texturized protein made from soy, peas, wheat or other plants, is an excellent source of protein. Don’t let yourself be fooled by “but that’s not natural!”, a lot of food might at times be better the non-natural way, or do you really want to eat your legumes raw and hard and full of lectin? TVP comes in a variety of shapes, as powder, flakes, pellets, or e.g. shaped similar to chicken strips. Soak it in water, broth or stews, and you have high-quality protein with a nice texture added to your meal with almost no effort. Most take on some of the flavor of what you soak them in, and don’t require any heating, making them very convenient.

Note that of all the different types of plant protein, TVP **made from soy beans** tends to be the best in terms of nutritional value: It contains all 9 essential amino acids in sufficient amounts, something no other legume-based protein can do on its own. Soy protein can be an excellent, easy to store and use replacement for animal protein in your pantry, and is for many vegetarians of the world.

Texturized plant protein, aka textured vegetable protein (TVP), easily has 2-5 years shelf life if stored dry, airtight and not too warm, often even being okay way longer. It is one of the best forms of protein to stock up on, due to the long shelf life, high density of protein (soy even with full amino acid profile), and how easy it is to add to any meal. If it hasn't gone moldy, pests haven't gotten into it, and it doesn't smell foul, rancid or stale (usually it takes many many years or poor storage for that, if at all), or taste bitter/unpleasant, it's most likely still good.

Canned Fish & Meat

Fish and meat are of course the go-to sources of complete protein for any non-vegetarian or non-vegan, and canned these animal products can have a very long shelf life, superior to most alternatives of preservation for them.

Canned fish are or can be great sources of omega-3 and various nutrients, besides just like meat also of protein and healthy fat. Good examples are **sardines** as nutritionally outstanding, downright an all-in-one type of fish with minimal issues regarding heavy metals or other pollutants found in some fish, and **herring** and **mackerel** (both good allrounders).
Canned fish tends to be good for easily 3-5 years, some even 5-10 years, if perfectly stored even longer, although the omega-3 will slowly degrade over time. Versions with more salt or in tomato sauce often have an even longer shelf life.
Advice: Don't pour away the oil they might come in. This oil tends to contain a good chunk of nutrients, is often very flavorful, and can be used for dipping bread or for cooking.
Note: **Tuna** and **salmon** taste great, and it's okay to have some in your pantry if you like those. Nutritionally though they are not as good as sardines, mackerel or herring. These, like most predatory fish, tend to have more issues with heavy metal & other pollutants adding up in them, as they sit higher up on the food chain. If you care about it, there are also considerable environmental concerns regarding these two and other predatory fish, both wild-caught and from aquaculture. **Cod** is another well-known example of a fish with these issues.
In general I recommend favoring small, plankton-feeding, fatty fish with short lifespans over longer-lived predatory fish.

Canned meat tends to be good for 5-8 years and often even longer, although it loses quality and flavor more quickly than canned fish, even when technically still safe to eat. Nutritionally it is not as good as fish, but still a decent source of protein and some nutrients. Generally speaking though I recommend favoring fish over meat, if it suits your taste. There are also other types of canned meat besides the classic "Spam", like canned chicken. If you are not fond of canned meat, you can consider texturized plant protein as a decent replacement and source of high-value protein (see above), which has an incredibly long shelf life, is lightweight, and needs no preparation except tossing it in some liquid like water, broth or even pureed tomatoes.

Make sure to store the cans dry, as corrosion is often the #1 killer of canned food, long before anything else would be. As long as the can is intact, not bloated, and hisses when you open it , and the content looks, smells and tastes normal, usually the stuff is still okay to eat for up to a decade or so.

A lot of canned fish & meat are sadly loaded with sodium and even questionable food additives, so I recommend checking the cans you buy for their content if you are concerned about this issue. Beyond a bit of salt none of these additives are needed for a long shelf life of canned fish or meat. Some additives are even added just to mask poor quality or bland flavor.

Btw, there is also **shelf-stable bacon** available, if you really love your bacon. You can find out more about it here: https://allfoodfaq.com/what-is-shelf-stable-bacon/ or just search online for "shelf-stable bacon". Don't expect it to be cheap, though.

Dried meat & fish

Dried meat & fish is the non-vegetarian, age-old alternative to both texturized plant protein and canned meat – but usually with a shorter shelf life. I have more limited experience with this than other types of pantry food for a number of reasons, so I'll just cover the basics here.
Generally speaking, drying has been the traditional, and is a still-practiced way to store meat without refrigeration, with a decent although usually not outrageously long shelf life. There are a few common ways meat is additionally preserved & flavored, besides drying as a baseline: These include curing with salt, smoking, adding herbs & spices with preserving properties, and in some cases even fermenting. This results in wildly different types of preserved meat or fish, depending on the exact production method.

In this category for **dried meat** you find things like low-fat, very hard sausages such as dry types of salami (not the soft, fatty stuff you need to keep refrigerated sometimes sold under that name, too), traditional jerky, or as a modern, often even longer lasting version freeze-dried meat, and even some types of hard, smoked and cured bacon can be part of this group. The exact shelf life without refrigeration of these types of traditionally or modern dry-preserved meats can range from very few weeks to several months, in some cases even years under the right conditions (usually: very dry, cool, dark, and of course away from contamination & pests), but don't count on it – even bone-dry jerky that feels like chewing leather usually doesn't stay good for more than six months to a year under the best conditions.

For **dried fish** the same applies, but specific types of dried fish are downright famous for how long some types can last, e.g. Stockfisch reaching or exceeding 4 years of shelf life. Don't try making those yourself unless you really know how to do it – preferably learned from someone with enough experience. The process of making dried fish which has months or even years of shelf life is no small undertaking, and messing it up usually ends with rotten fish. The kind of fish with such a long shelf life is really hard and dry like sticks or thick leather, and requires a lot of soaking in water before you can eat it.

There are also regional, mostly Asian products like various types of shelf-stable shrimp paste or Krupuk, including fermented & dried Katsuobushi for dashi-type broths and other types of meals.
Depending on their exact type their shelf life can vary enormously, just as their potential uses can. If you live in a region where these are common, you probably know more about them than I do.

If not and you encounter and want to try them for your pantry, inform yourself carefully about that specific type. The variations are too numerous for me to cover here properly, and I'm also familiar with only a few of them anyway.

Something both dried fish and meat have in common is that they tend to be significantly more expensive per calorie and per gram of protein you get from them than texturized plant protein or canned meat & fish. So whether you want to add these types of preserved fish & meat to your pantry or not, even if just a bit as a savory treat, is up to you. For pure monetary and pantry value though, dried texturized plant protein and canned meat and fish will serve you, your pantry and your wallet better.

Some comments on making dried meat & fish yourself: Yes, there are also ways to dry those yourself if you have the right devices, but for this I also have to refer you to people who know more about it. There are plenty of videos, articles, and books you can consult about making, storing and consuming such meats and fish.
Keep in mind that most homemade jerky only stays good for a few days to at best a few weeks without freezing. Please inform yourself well about what your options are, how to store the specific type of dried animal product you make, and what its realistic shelf life actually is. Use multiple sources, because some make potentially dangerous omissions or false claims, and food poisoning from spoiled meat & fish is among the most dangerous kinds you can get.

An important **caveat** here: Never casually store (partially) dried meat & fish products in vacuum-sealed containers, unless you plan to thoroughly heat them before eating (see why under "About Storage" and both "Caveats about Botulism", and under "Vacuum Packing"). Better yet: Just don't, or only do so for freezing your dried meat / fish, which moves it out of pantry territory and into your freezer. At worst, if the dried meat or fish still contains enough moisture – which is common especially for homemade jerky – vacuum sealing creates exactly the conditions botulism bacteria love: anaerobic, low acidity, and room temperature. If your jerky is not almost as hard as sticks or leather, it is most likely not "good for many months or years for pantry storage", and it absolutely can eventually rot, including in a vacuum-sealed bag. The anaerobic conditions are then just a big plus for Clostridium botulinum, which loves exactly the conditions vacuum sealing creates. Fat in meat and fish will also go rancid without refrigeration, and vacuum sealing can only slow that down, not stop it entirely.

So for long-term storage of most dried meat & fish, you need a freezer – unless it was explicitly made for storage at room temperature for a specific amount of time.
"But in the past people made jerky to last them through the winter": Yes, and in winter temperatures were cold to freezing, and guess how that dried meat was stored then.
"But in the past people kept dried meat for many months even during summer and created their winter provisions from it!": Yes, and they knew how to dry it to leathery conditions, and do other things with it to enhance its shelf life (like smoking / curing with salt), and then how to store it properly, and they knew how to detect when any of their jerky was too suspicious to eat, and they certainly did not store in a vacuum-sealed container.

Please don’t play around with this. If in doubt, stick with canned meat and fish for your pantry, and treat jerky as a snack. If you buy jerky in bulk, just freeze these meaty treats for long term storage, and for that vacuum-sealing can have its rightful place.

Whole Egg Powder

Whole egg powder is widely used in the food industry, but you can also get it surprisingly cheaply if you look around a bit. Nutritionally it is basically as good as the fresh eggs it is made from, meaning it is an excellent source of extremely high quality protein and a variety of important nutrients like choline and vitamins (A, D and some Bs).

If kept in an airtight container, dry, dark and not too warm, it does not need refrigeration and has an incredibly long shelf life way beyond its best-before date, measured in years: Under perfect conditions 5-10 years, in some cases it can potentially even outlast a decade. The biggest problem is usually the fat content eventually going rancid, or it gets stale – either way you should be able to smell and taste it if that happens. Of course if it gets greasy, moldy or stale, you know too much humidity got into your container. You will absolutely smell it if it has gone rancid – the odor is really unpleasant and hard to ignore.

Its biggest enemies are oxidation (= air contact) and humidity, even more than for most other dry food staples. If you do not use it up within a year or two, ensure you keep the powder in a really airtight container with maybe also some food-grade moisture absorber on top, or, if you can get good quality ones, even an oxygen absorber pack for really long-term storage. These oxygen / moisture absorbers are not utterly needed in a normal pantry though: I have stored whole egg powder 1-2 years beyond its “best before” shelf life in an airtight container, and never had any issues within that time frame. YMMV, and a lot will hinge on your specific circumstances & practices, and thus whether humidity / oxygen absorbers are really needed.
Stored in its original, vacuum-sealed container (often mylar bags) none of that is needed of course, just keep in a cool place where pests can’t get to it (and if in see-through bags, dark), and some might stay good for 5–10 years total according to available information – but I never tried that myself.

Fresh eggs are wonderful, but high quality whole egg powder can taste surprisingly close to fresh eggs for scrambled eggs and in many other recipes that require eggs, or even downright indistinguishable. You can either mix the powder with water as directed, and after stirring and a brief soak you’ve got scrambled eggs, or you can add it directly to recipes. In the latter case, just add a bit more water than usual. It also works as a thickening / binding agent to various recipes, while contributing a good chunk of nutrients and of course protein.

If you look around you might get a larger bag of this good pantry stuff that is actually cheaper than buying the same amount of fresh eggs. Having a bag or even two of egg powder, bought bulk and properly stored in your pantry, lets you enjoy your fresh eggs whenever you have them, while keeping the powder as a reliable fallback and convenient ingredient for various recipes.

As seen not long ago in the USA, and before that in Russia, eggs can experience serious price spikes and even supply disruptions. If you ever experience such times and like eggs, you'll be glad if you have in your pantry enough whole egg powder to last you for many months, and thus weather the periods of higher prices by simply using your stashed powder.

A little trick I also mention elsewhere: If you don't like stirring such powder until it won't clump anymore: Get a **milk frother** / **handheld frother**. They are available pretty cheaply as simple battery-powered gadgets and help stir all kinds of mixtures well enough to disperse most clumps, as long as the mixture is not too thick. I use them for anything from quickly whisking my whole egg powder or milk powder with water to making beverages from simple ingredients like cocoa powder + milk powder (or canned coconut milk) with some sweetener.

Milk & Milk Powder

Milk and its derivatives are an important source of calcium, protein, and some other nutrients, so it has a stable place in any good pantry for anyone who drinks or uses milk for cooking and baking. The preservation methods all slightly impact the B-vitamins in the milk, but the other nutrients are still fully present.

Fresh milk of course needs to be refrigerated. **Shelf-stable milk**, on the other hand, is sterilized and can stay good easily for months in an unopened tetra pack or bottle – under excellent conditions even 1-3 years beyond the "best before" date, in some edge cases even longer. After opening the container, shelf-stable milk of course needs to be consumed fast or refrigerated to last at least a few days. Shelf-stable milk also has the added benefit in your pantry of being a source of liquid, in case you ever encounter trouble with the water supply.
Technically it can spoil eventually without you noticing by scent and taste, but those cases are rare. The main signs of shelf-stable milk gone bad are a rancid, stale, rotten or bitter taste – it rarely gets sour as long as it's stored in an intact container. Other typical signs of it having gone bad would be a changed texture – typically slimy or flaky.
Something that can happen, and is not a sign of spoiling, is a slightly cooked or faintly caramel-like taste, caused by the Maillard reaction. If you don't like this taste or find it off-putting, just toss it – better safe than sorry, even if it's just a matter of taste.

For those who are lactose intolerant or vegan but want to have their bit of "milk", there is shelf-stable soy milk or other plant-based milk, but you probably know that already if you belong to these groups. Their shelf life varies too much for me to make any general statements.

Milk powder, if kept airtight in its original container, dry, dark and not too warm, has a shelf life that can often exceed the best-before date by a lot: Expect easily 2-5 years for whole fat milk powder, and some low-fat versions easily reach 5-10 years or can even outlast a decade while still fine for consumption. If you want to understand what you are getting for what purposes, please inform yourself first what different kinds of powdered milk actually exist, as different types of preparation can significantly affect shelf life, storage requirements, and taste.

Typical signs of milk powder gone bad are rancid or stale smell or taste, sometimes also bitter or foul, and noticeable, suspicious change in color. In theory, clumped milk powder can still be fine, but as it's usually a sign of moisture having gotten into the container, it might also have spoiled – so be careful with clumped milk powder, use at your own risk etc.
Milk powder with a bit of water does not taste exactly like fresh milk, but after getting used to it many people find the taste perfectly acceptable and just slightly different from fresh milk. Some even prefer it for some uses, e.g. in coffee or for some baking purposes.

A little trick I also mention elsewhere: If you don't like stirring such powder until it won't clump anymore: Get a **milk frother** / **handheld frother**. They are available pretty cheaply as simple battery-powered gadgets, and help to stir all kinds of mixtures well enough to disperse most clumps, as long as they are not too thick. They are also useful for whisking egg powder or mixing cocoa powder and other ingredients into beverages.

In a certain way the old, Middle Eastern and Turkish Kashk and Tarhana also belong into this category, even if strictly speaking they are not milk powder. In most regions of the world these types of shelf-stable preparations of milk are unheard of though, and not available. If you live in a region where such staples for the pantry are available, you probably already know more about them than I do ;^)

A special case is **canned milk** commonly called **condensed milk**, evaporated milk or concentrated milk. Due to the reduced water content and sterilization in the can it has easily a shelf life of 2-5 years, in some cases even more, and you can use it as-is, or simply mix it with some water to get back to what normal milk tastes like. Over time it might get a little more yellowish or even darker anyway, and the mild caramel flavor it tends to have can intensify (Maillard reaction).
Its nutritional profile is similar to shelf-stable milk, just with a slightly different flavor and texture. Due to the removal of 30-60% of its water content, it takes less storage space than shelf-stable milk, but more than milk powder. You can use it in cooking, for your beverages, or any other recipe that calls for milk, you just have to factor in the lower amount of fluid compared to normal milk, and add extra water. For some, canned milk's higher milk sugar content and creamy texture make it almost a treat to enjoy as a beverage, or as part of other beverages.
Note that some versions come with a high sugar content – **sweetened condensed milk** – which enhances shelf life even further, but the taste and higher calories can be undesirable, or for some more desirable. The sheer amount of sugar often found in this type of sweetened condensed milk can easily make it more something akin to a sweet treat, even if it still has the nutritional profile of milk otherwise.

For all types, can, jar or tetrapack, the usual rules for canned food apply: No corrosion or bloating, a slight hiss when opening a can or jar, and no sour, foul, bitter or rancid smell or taste. If it got clumpy or flaky, throw it away, while a slight separation between the fat and liquid after a while is a normal aging symptom and not automatically a sign that it has gone bad – just shake or stir it well, and the fat and other liquid will merge again.

Cheese, Powdered or Freeze-dried / canned

Depending on where you live, you might have never even heard of these types of shelf-stable cheese products, and it might be impossible to find, or you can get it pretty cheaply in bulk from your local supermarket: **Powdered Cheese**, and **canned cheese**.

Powdered cheese comes in various forms, but almost always involves freeze- or spray-drying the right kind of cheese, and selling it as powder mainly used as a replacement for cheese in various recipes, toppings or as a seasoning.
There are also little cubes or slices of cheese prepared via freeze-drying, mostly sold as snacks but also usable as a replacement for normal cheese if rehydrated – though these can be pricey in some parts of the world.

Depending on the exact type of cheese, how it was dried and processed, and how much fat it (still) contains, the shelf life can vary a lot from a few weeks to more likely a few months to a year or two, in some cases even longer. Of course it needs to be stored most of all really dry and preferably also away from warmth & oxygen (or the fat goes rancid eventually), so an airtight container in a cool spot is a must-have if you want a long shelf life out of it.
Besides being an option for any cheese lover that doesn't need refrigeration and thus can be stored in your pantry, it still retains most of the original nutritional profile, with just some vitamins (mostly B vitamins) potentially a bit reduced, and possibly some fat lost.

Canned cheese is what the name says: Cheese that has been canned. Please don't try this yourself unless you really know what you are doing – not only because cheese, as a protein-rich food, provides a favorable breeding ground for Clostridium botulinum, but also because the nature of cheese means it will most likely not survive the canning process intact. More likely than not you'll just end up with a ruined mess. Most canned cheese is quite a bit more expensive than regular cheese, so judge for yourself if your love for cheese is worth the investment .

Otherwise, stick with powdered cheese if available in your region, and/or with some cheese that lasts well in the fridge & freezer, and that can also handle at least a bit of time unrefrigerated if stored correctly. If you are interested in storing cheese unrefrigerated, you can read up on how to do the latter elsewhere and a bit also much further below. It usually involves wrapping the cheese in cheese paper or specially prepared cloth. Examples for such are solid or very hard types of cheese like gouda, cheddar, or even harder ones like parmesan, grana padano or manchego.
You can also make something tasting a bit like a cheese spread or crumbly cheese from nutritional yeast flakes, oil, water, starch and flavorings as you like (see under "Seasonings & Flavoring", "nutritional yeast flakes").

Whey Protein / Protein Powder

Most people, if they know of Whey Protein or **Whey Powder** at all, only think of it as “the stuff only body builders and athletes use”. Those indeed often love it, as it is one of the most complete sources of almost pure protein (all 9 essential amino acids), with some indicators it might have an even slightly better bio-availability than soy protein (see above under Texturized Plant Protein, often made from soy protein, or below about soy protein powder). If you want to build or regain muscles, it's definitely a great source of nutrition.
Even if you are not an athlete though: As long as you are not vegan Whey Protein Powder is an amazing, simple to store, simple to use source of low-fat protein for your body, and you need significantly less than an athlete who wants to build more muscle mass. Simply mix a bit in water, milk, yoghurt, pour it into juice or a smoothie, or add it to recipes where its taste won't impact the meal negatively – or even positively – and you add an amazing amount of protein per ounce, easy to consume, digest and metabolize. It also comes in flavored versions.

Whey Powder has an excellent shelf life in unopened containers, due to its very low fat content – which means little to nothing that could go rancid. It can stay okay for years after the best-by date, but there are also plenty of versions on the market with either additives to enhance shelf life, or to change flavor, texture, how well it dissolves in liquid and so forth, which can significantly alter the shelf life.
Especially if sources of fat are added, those can go rancid in whey powder, which of course can significantly lower the shelf life, so I cannot give you a one-fits-all-rule here. Even the way the powder was processed and packaged can make a significant difference.
Usually – but not guaranteed – the general rule for almost all types of dry, protein-rich (and with added sources: containing some fat) types of food applies: Store in the original or another airtight container, and keep it dry, dark, and cool.

The typical shelf life, according to sources I found, is at least 1-2 years for an unopened, undamaged container. Once you open the container, and it continues to look, smell and taste normal, with no changes in texture, no mold, no discoloring, it is most likely still perfectly okay to consume for at least 4-6 months, potentially more with the right additives and / or storage practice.
Typical warning signs of your whey powder gone bad are significant clumping or even a greasy or slime texture developing (throw away!), or also a sour, rancid, bitter, or foul scent (or taste!) – any such scent / taste is a reason to toss it.

Once you open such a container for the first time, the clock really starts ticking as always, most of all due to moisture & oxygen inevitably getting in. Whey powder, despite being almost entirely protein, does not really need refrigeration, and moisture is a greater spoiling factor for it than anything. Real heat can also be detrimental: If temperatures regularly rise above roughly 30°C / 85 F where you store it, consider relocating your powder to your fridge in a really airtight container. Many fridges have for good reason a slightly humid climate, which increases the chance of moisture to get into the container if it is not really airtight or not really closed well, so the fridge as storage for whey powder is a tradeoff.

Also make sure to never put an even slightly moist spoon or anything like that into the container, because whey powder can go bad really very fast if you add moisture, even faster than many other “keep dry, dark and in an airtight container” types of goods.

Even if it is technically still fit for consumption: The longer you store it, the more some of the proteins might break down, and thus you get less of its nutritious benefits. If your Whey Powder seems overall still okay, but has gotten slightly more yellow / dark and somehow smells slightly like caramel, that is most likely a sign of maillard reaction. This is fairly harmless, but a sign of the proteins breaking down, and you are losing nutritional value with each passing month. Decide for yourself if it is still worth consuming asap, or better to toss it (some animals might still love it, if they can digest whey, but not all do!). So “still good” is a relative term for Whey Protein Powder – fit for consumption, or genuinely good as part of your wholesome nutrition.

Soy Protein as another very complete, high quality source of protein (amino acid) is available not just as texturized plant protein (see above), akin to a “meat replacement”. As dry powder it is also a convenient, vegan alternative to whey, and depending on what is cheaper you can go for whey or soy protein powder, or both. They are both good and even some of the most complete sources of protein (amino acids), with just slightly different nutritional and health profiles. For dietary and recipe matters, you can usually use whey or soy protein powder interchangeably, with only minor differences.
Generally speaking, whey is even more easily digested and metabolized than the already excellent soy protein powder, while the latter might also have some additional health and nutritional benefits, but research results regarding the details seem to be still (date: 2026) tentative and at times a bit conflicting.
In general everything I said about storing Whey protein also applies to Soy Protein Powder (and other plant-based protein powders), just that Soy Protein is a bit less sensitive to heat, moisture and oxygen – this does not mean it is not sensitive to these things, just that Whey Powder tends to be really sensitive if you mess up storage, while Soy Protein Powder can be a little bit more forgiving.
As a rule of thumb: Stored dry, dark and cool in an airtight container, and you can expect at least 1-2 years of shelf life before opening it the first time, after that between half a year and a year. With excellent storage practice high quality soy protein powder with no additives can last way longer though, and at best might even approach the incredible shelf life of texturized soy protein (see above). Of course any food additives in your powder can change the shelf life, just as with Whey Powder: Some enhance it, some lower it, some are irrelevant.

There are two caveats about soy protein, depending on your personal situation and perspective:

- Soy beans contain so-called “phyto-estrogens”, estrogen-like substances that can have an impact on estrogen levels (if consumed in sufficiently large quantities). This can be beneficial for some, problematic for others. To my knowledge, the scientific conclusions are still… inconclusive. If needed / interested, inform yourself about this and make your own decisions based on the available data, just don’t use one or two sources, as the debate is really very complex as is the research on this matter.

- It is getting increasingly more difficult to find soy protein that might not be at least in some way contaminated with GMO soy beans. If you want to avoid any and all GMO in your food, even in trace amounts, be aware of this risk regarding any and all soy products, not just soy protein powder and texturized soy protein.

There are also **other types of Protein Powders** around, which you might consider instead or in addition to whey and / or soy, depending on your taste and needs. Keep in mind that unless such protein powders combine several different, well balanced ingredients, you might not get a complete profile of all 9 essential amino acids from those on their own. You will usually need to combine these powders with suitable grains to make up for the missing amino acids, or of course other sources, e.g. various animal products.
This is not to tell you not to get such protein powders. Especially if you are concerned about the potential estrogen effect of soy protein and are vegan, this can be a viable alternative if done right, and there are high quality plant protein powders of different types mixed together to offer an excellent nutritional value at similar prices as soy protein powder.

About prices, flavors and extra nutrients: If you can find whey or soy / other plant protein powders like these for a good price and you like their taste, they can easily become a staple for your diet, be it in yoghurt, milk, smoothies, or sprinkled over meals they harmonize with. Especially if you don't want to or can't cook at the moment, protein powders can be a blessing to provide your body with the high-quality protein it absolutely needs daily, and they don't have to be as expensive as you might think.
Don't be taken aback by the price at first: 100g of these powders tend to contain around 70-80g of protein. For comparison, eggs contain around 13g / 100g, most fish & meat 18-28g / 100g, and only poultry breast (chicken, turkey) with around 29–31g / 100g can get close to half the protein content of these powders. So think about your usual sources of protein, how much you pay per pound for those and per total gram of protein, and you can see which wins out in the protein / price ratio (besides the other nutrients these various sources of protein provide), and how well their shelf life turns out.
For comparison: classic spam (canned meat) comes out at only ~15g protein / 100g, so you can very roughly multiply the price of spam by 4 to 5 to compare the price of these protein powders to that of such canned meat.If 3 cans of spam – roughly 1kg – cost you 15 bucks and give you 150g of protein, and 1kg of protein powder costs you 35 bucks (some can be even just 25-30 / kg) but gives you 700g of protein, then the protein powder clearly wins out in terms of protein for your money (10g of protein per buck with spam, 20g with protein powder).
Check prices per kg or pound, though, as you can find the same nutritional value for excellent bang for the buck, or rather protein per 100g / ounce. Make sure it ideally covers the full 9 essential amino acids, and is not just pea protein or such and nothing else, at worst sold for more than whey or soy!
Also beware and compare prices in general: Why pay 2-3 times as much for some oh-so-cool packaging and marketing if you can get the same content cheaper elsewhere. Some of these protein powders are marketed to health & fitness nuts for ridiculous prices, while good protein powder does not have to be expensive – some vendors just know they can sell it for hilarious prices with the right marketing to certain customer groups.

These powders also come **in all kinds of flavors**, like cocoa, vanilla, strawberry etc., and sometimes also additional nutrients. You can just as well also just go for a cheaper, pure whey / plant-based protein powder if available, and add whatever flavoring you like: Why pay twice as much for your protein powder just because it has a bit of cocoa powder added, if you can grab a pack of cocoa powder you like, maybe some sugar or stevia, and mix and match yourself, being cheaper than paying extra for someone else doing the mixing for you. So check for yourself what works for your taste, convenience, and budget.
A little warning though: Some of these powders come also **"enhanced" with a variety of extra nutrients**, like B-vitamins, minerals, and/or vitamin D. This can be great if you want to use them anyway as an important source of these nutrients for you. if you already get enough from your diet and / or additional supplements, please make sure what exactly you might end up "over-supplementing", as some vitamins or minerals if consumed too much can have negative health impacts.

See also under "oatmeal" for a simple "recipe" to use such protein powder for a very nourishing, healthy breakfast that should keep you sated and going well into the day.

Tempeh (dried or canned)

Tempeh, made from cooked, fermented soy beans, originates from Indonesia, but has spread throughout Asia and by now increasingly around the world. Fresh tempeh doesn't stay good for long. Industrial-made, vacuum-packaged versions of tempeh are by now available in some countries even outside its original region(s), which still require refrigeration but usually have a shelf life of 2-3 months .
Warning again: Don't store vacuum-sealed food that is not shelf-stable at room temperature, because not only will it eventually rot with few or no signs for you to detect, at worst you might risk dangerous botulism if the conditions are right for it.

Tempeh has an amazing nutritional value, as the soy beans offer a lot of protein with all the essential amino acids, and the boiling and fermentation involved in making tempeh makes those soy beans easier to digest, plus offers additional nutritional value, such as being a good source of nutrients like vitamin some Bs including B2, vitamin K2 (one of the few plant-based sources of it), manganese, magnesium, iron and others, plus dietary fiber. It is a pretty good vegan / vegetarian "meat replacement", provided you like its firm texture and hearty, slightly nutty flavor. Good tempeh can be eaten boiled, fried, or even raw, depending on the type, and with all kinds of seasoning. If it tastes somewhat bitter, the production method most likely wasn't optimal.

There are also **dried versions of tempeh**, although potentially not available in your region. The shelf life of such dried and therefore now shelf-stable tempeh depends a lot on the exact type of drying and other conservation methods, so if in doubt, go by what the package says. Otherwise inform yourself thoroughly about tempeh, its types and storage if you want to know more about it before you make storage & consumption decisions.

You might also be able to find **canned tempeh**, although it tends to be a bit more expensive. If it comes in a glass jar, though, you get a free extra jar for further uses from such shelf-stable canned tempeh ;^)
Please be careful with canning tempeh yourself, just as with all protein-rich food. Never eat any tempeh you canned yourself – no matter what method – without first thoroughly heating it. The chance of botulism is tiny but real, and it can be lethal. Yes, you are probably sick and tired of me mentioning it again and again, but it needs to be drilled home thoroughly to avoid dangerous mistakes someone might make.

Coconut Milk, canned

Canned coconut milk easily has a shelf life of 2-5 years, in tetra packs of 1-3 years, and depending on details even longer, often well beyond its “best before” date. Note that if stored for a while it is normal for the fat to separate from the rest of the liquid, that is harmless: Just shake it thoroughly – ideally at room temperature – and it should go back to normal .

The longer you store it, the more the taste and quality degrades – it might get a bit yellow, and the taste becomes flatter, faintly rancid, or faintly soapy. As long as it does not go beyond that,it is technically still okay to consume in a pinch, and especially in cooking you might not even notice the slight degradation in taste. If it smells very rancid, the fat has oxidized too much and it's no longer fit for consumption. The same goes if it tastes or smells foul, soapy, shows suspicious discoloration, a slimy texture, or other warning signs. If the can has corroded noticeably in spots, or the can or tetra pack is otherwise damaged, bloated, or looks like it might have been letting air in, don’t risk it and toss the can / pack.

You can also store coconut milk in the freezer, and essentially hit the "pause button" on its shelf life. If you do this though the texture significantly changes, the milk will become less creamy and more grainy. Once thawed it is still perfectly fine for curries, soups and generally for cooking, but not great for beverages, most desserts, or anything that requires a smooth, creamy texture. If you have some leftovers from an opened can or tetra pack of coconut milk, you can easily freeze it in a tray for ice cubes, and then store those cubes in a container in the freezer, in ready-for-use portions. In the fridge opened containers of coconut milk won’t last you long before spoiling, and even less at room temperature.

Coconut milk might be called milk, but it contains very little protein, and consists mostly of (saturated) fat and water, plus a few minerals. This makes it not a great addition to your general nutrition strategy beyond the fat it provides, but an amazing part of planning tasty meals, from curries and soups to desserts and baked goods, or just adding a splash to a smoothie or other beverage to make them more flavorful. It also mixes quite well with a bit of cocoa powder into a flavorful coconut-cocoa milk, sweetened to taste with sugar or stevia, or thinned out with a splash of water. Note that good coconut milk should have only 2 ingredients listed: Coconut and water, at most a pinch of salt. Many nowadays are loaded with emulsifiers, stabilizers, fillers and other things, and sold for the price of pure coconut milk. Read the label well before you buy.

Cooking oil / Ghee

You can't keep going without fat. And the shelf life of properly stored oil or ghee is well beyond their best-before date, plus you can usually detect easily if they've gone bad (rancid). Store away from warmth and light, and your unopened bottles can easily be fine for at least 1 year, many even 2-3 years or even a bit more if they are long-lasting ones. Those with notably better or worse shelf life I'll mention separately.
Keep in mind that “shelf life 1 year, some even 2-3 years, potentially even a bit more” is a rule of thumb mainly about “how long until this stuff becomes rancid and not palatable anymore”, while potentially still "okay to consume if you have nothing else to use".

Cooking oil can also be spoiled by bacterial contamination, while rancidity itself is usually just a sign of the oil aging through oxidation, and thus causes the oil to taste bad. Many of the health benefits of various oils are also largely lost once they have gone rancid. “Shelf life” regarding oils is a complex topic, depending on how you define “shelf life” between “full health benefits”, “still palatable”, “not palatable but still safe to use”, and “really unsafe to use”.

As another rule of thumb, with the devil then in the details: Cold-pressed oils may or may not be better for your health, but they often have a shorter shelf life. There are also “stabilized oils”, which can involve a number of treatments that may or may not enhance shelf life while at the same time affecting the health benefits. So do your own, thorough reading if you want to know and understand more, and once more consult more than one source of information about any of the oils you are interested in, as there are also a lot of opposing opinions besides the known facts involved.

Generally speaking and even if you are into food storage for more than 6-12 months (so beyond "tier 3 pantry" levels as defined above), I do not recommend stocking up on cooking oil for more than 6-12 months, unless it is one of the very few types with a genuinely long shelf life (like very well stored or even canned ghee, or coconut oil), or you are willing to store some of your oil in the freezer. There are only two notable exceptions: Ghee and coconut oil (see below).
Oil really doesn't like warmth, light, or air, and if your pantry isn't really nicely cool, and you live in a moderate or even worse really warm climate, those conditions will matter. The unopened bottle of olive or canola oil that sat on a shelf for half a year is most likely still very good, after a full 12 months it might already be entering a stage where it is to varying degrees degraded (or not, a lot of factors can influence this, not all within your control). After 2 years in storage, degradation is all but guaranteed, no matter whether you can taste it or not. After a year or two, most oils range from "tastes slightly funny / soapy" to so rancid you'd use them only if you truly had no other choice – or for cleaning purposes. Maybe.

- **Rapeseed / Canola Oil**: Canola oil, made from rapeseed, has a great omega-3 to omega-6 ratio of 1:2, is great for cooking as it is very heat-stable, neutral in taste, and probably your best all-purpose cooking oil for most uses – and pretty affordable, too. It is nothing special beyond its fat profile and being fairly heat-stable for cooking, but that is precisely the point: it does the job of being a great cooking oil exceptionally well.

The only concern (up to you how you view this) about it: Canola oil is commonly extracted with hexane, a known neurotoxin. Only trace amounts of hexane can be found in food-grade canola oil, and there is ongoing debate about whether safety standards are too lax, sufficient, or too strict. If you are concerned about the hexane issue, opt for cold-pressed canola oil and move on with your very good cooking oil – good shelf life included (by oil standards) .

- **Olive oil**: Great antioxidant properties thanks to polyphenols, fairly heat stable for cooking, and a high proportion of unsaturated fats all make olive oil a great "other" cooking oil, especially if you alternate with canola depending on the flavor and other recipe needs. There is a lot to be said about the various types of olive oil, with extra-virgin usually the best for your health. If you want to know more about its benefits and drawbacks, you can read up aplenty on it online. Olive oil is so complex about its details, some people geek out about it the way others do about wine.
- **Ghee**: This “just the fat of butter” product can stay good in unopened jars longer than most other cooking oils/fats (5 years and more are possible) and even once opened, it stays good at room temperature for around 3 months. It has an amazing buttery taste as a replacement for butter on your bread, plus it’s extremely heat-stable, so it's in many ways a good addition to your pantry.
  Be aware though that ghee has no essential fatty acids and is mostly just saturated fat (if badly made, even trans fats), yet does contain a whole range of other nutrients. This makes it amazing for cooking, spreads, and other culinary uses, as long as used in moderation and not your sole source of fat long-term. Diet is about balance and moderation after all.
  Properly made ghee is surprisingly shelf-stable, and it can also be canned (avoid any moisture or contamination in your ghee if you want to home-can it, or you can end up with spoiled ghee or yes, also in the most extremely rare cases Botulism!). Even without refrigeration, it is usually shelf-stable for 1-2 years in a clean, uncontaminated jar at room temperature. If canned, expect 3-5 years or more, while frozen ghee is reported to keep anywhere from 1-2 years to 5-10 years without noticeable changes.
  You can get ready-made, canned ghee (but it's more expensive in many places), or make it yourself from butter – read up on it if interested, it's really not that difficult, and the leftovers make a great base for a "fake cheese dip/sauce" with nutritional yeast flakes, or for all kinds of other recipes. If good quality canned ghee is cheap in your region, it might not be worth the hassle. But if butter is significantly cheaper, you can just buy a few packages, make your own ghee, and optionally can it yourself for a supply that will last you many months if not years if properly done. Please do inform yourself properly before doing so, though, as correct, clean procedure is important to avoid spoiled or contaminated ghee as a result that could make you very sick.
- **Coconut oil/fat**: This is a great addition to canola oil and ghee in your pantry, and there is no reason not to have a bit of all, for different uses. The health properties of coconut fat – both for topical use (cosmetics, some antimicrobial properties) and for food – are well documented, and there is a lot you can read up on if you want, but be aware there are also a lot of bogus or non-proven health / dietary claims made by people who want to sell you something, and spread by their believing customers, plus there is some

contradicting information even in scientific studies. Example: “Oil pulling” is lauded by some to improve your oral health and help against bad breath, while others deny its effectiveness – the evidence so far is “mixed”, I’d say.
Nutritionally: Your body can metabolize coconut fat well, and it can help you feel less hungry. Keep in mind though it is high in saturated fats, so monitor your intake as needed. Olive and/or canola oil are probably overall better as your go-to oil, but adding some coconut fat to your diet is also potentially quite healthy.
Coconut oil is among the best when it comes to an extra-long shelf life if kept cool, dark and in an airtight container. You can expect a shelf life of 2-5 years if well stored, in some cases even more, especially when hardened, which isn't worse – it just has less of its own flavor. Shelf life depends a lot on the exact type and production process involved. Avoid temperatures fluctuating too much, as coconut oil/fat likes it stable (so don't keep it right next to heat sources, or anywhere temps fluctuate, like next to radiators, stoves, sun-drenched shelves, etc.).
After opening it of course oxidation sets in again and shelf life gets reduced. Avoid getting moisture into the jar (like with a wet spoon), and of course only use a really clean implement to remove some from the container, and close the lid asap. If you got yourself a larger jar, it might be wise to remove some of its content into a smaller jar you use for your cooking and baking, and refill from the larger jar when needed. This reduces the amount of oxygen and moisture getting over time into your larger jar.
There is also MCT coconut oil, which has undergone special processing and is liquid at room temperature. Its shelf life tends to be equal to or even a bit better than regular coconut fat, but it's usually also a bit more expensive. If you want to go for this, avoid the “health fad” type products that cost a fortune, try to find it as a “normal cooking” variant that will have equal or similar properties for much less money.
Besides a rancid, "soapy", or otherwise off smell, going more and more yellow or even green is also a sign of it going bad, as well as mold or other contamination of course. Keeping it dark and in an airtight container is usually more important though than refrigeration, and it stores extremely well in your pantry.
Note: Small “clumps” of white fatty mass in your coconut oil / fat are usually not a sign of it going bad, as long as it still smells okay and doesn’t turn yellow-ish or you detect contamination, it’s just a sign of the fat slightly melting and getting firm again (too much temperature fluctuation), but once you heat it the little “clumps” dissolve just fine.

- **Sunflower seed oil**: "Standard" sunflower oil has a horrible omega-3/6 profile and a poor ratio of saturated to unsaturated fats, but is a good source of vitamin E (more than twice as much as in canola oil). It is not very heat-stable, so not a great choice as a cooking oil, but in moderation fine for cold dishes and for the vitamin E. Just for vitamin E, you could consider keeping some sunflower seeds in your pantry instead, which have a decent shelf life and offer additional nutritious benefits compared to sunflower oil.
  High-oleic sunflower oil tends to be healthier in terms of fatty acids, although the way sunflower oil is extracted can also make a difference (cold-pressed = better for health, and depending on the exact process, also more heat-stable). So it might not be your best primary oil. If you want to know more, there is a lot of material online explaining the different use cases for various types of sunflower oil.

- If you are concerned about your vitamin E-intake (main benefit of sunflower oil) without it, you could consider a supplement (which doesn't have to be expensive), or adding a bit of **Wheat Germ Oil** to your diet: A teaspoon a day can cover your daily vitamin E needs. Combined with other sources of vitamin E in your diet you can just add a teaspoon from time to time to some of your meals if you want that extra source of vitamin E. Its major drawback: It has a (nutritional) shelf life of at best six months in the fridge, and only weeks at room temperature, so it does not belong in your pantry, but in your fridge or even freezer (where it can retain its full nutritional benefits for roughly a year, according to various sources). It is extremely prone to oxidation, and not exactly good for cooking, either. So if you use it, store most of it in your freezer in small, airtight containers, and only have enough in your fridge to last you for a few months max.
- **Linseed oil** is an extremely healthy source of ALA for omega-3, but don't heat it! As a source of omega-3 it is easily worth your money, but as a cold-pressed oil it is prone to oxidation, and has a shorter shelf life. Even well-stored in a dark glass bottle, unopened in a cool but not refrigerated place, it will lose its healthy ALA content over time, so even with good storage, it rarely stays at its best for more than six months. After that you can still use it, but the quality will degrade with each passing month.
  In your fridge it might stay good for maybe a year, frozen of course even longer, but even freezing doesn't completely stop the oxidation that gradually reduces its health benefits. Usually you can freeze linseed oil even in its bottle, or simply freeze it in ready-to-use portions in ice cube trays.
  Pour a bit into your yoghurt, or over your rice and legumes after cooking, and you have a solid additional source of omega-3 (via ALA, alongside canola oil). Note that ALA needs to be converted by your body into usable omega-3, and excessive omega-6 intake increasingly impacts this conversion negatively. If you like it, the slightly nutty flavor pairs well with yoghurt, oatmeal, potato salad, and so on.
- **Peanut oil** is tasty and very heat-stable for cooking, but does not have the same shelf life as the aforementioned cooking oils or ghee. Besides being a source of vitamin E it offers little to no other major health benefits – so it’s not bad, but not good, either. If you like the taste of non-deodorized peanut oil of course you can use it, but the other options tend to be superior nutritionally and/or for other qualities, including shelf life.
- **Sesame oil** has been rightly lauded for a long time for its cosmetic and even some light medicinal value. It is rich in unsaturated fats (but low in omega-3) and contains antioxidants. The taste is very characteristic, so most people tend to use it sparingly – it's more of a "flavoring oil", even though you can also use it for cooking.
  Refined sesame oil is well suited as a cooking oil, roasted sesame oil less so and more for cold dishes or final flavoring.
  Sadly, the shelf life of sesame oil – including for its finer properties – is only around 6-12 months in an unopened container for refined sesame oil, and even less for roasted sesame oil. Once opened it belongs in the fridge, or it might go rancid within just a few months or even faster .
- **Avoid most other oils** for your pantry with worse shelf life, worse heat stability, and/or no good health benefit otherwise, like corn (maize) or soy oil – both have a short shelf life and other issues.

Of course there are **other very healthy oils**, like from Avocado, Pumpkin seed or Walnut, and you can read up on them if interested and don't know them yet, but they all suffer from the same issue: a poor shelf life, even in the fridge – somewhere between wheat germ oil and linseed oil.
Most but not all are also not heat stable, so mainly to be added to cold / lukewarm meals, not for cooking – avocado oil being a notable exception, as one of the best cooking oils (high smoke point). If you like their taste and health benefits, they store well enough in your fridge or freezer as a short-to-medium term supply. As long-term pantry staples, they are usually a poor choice.

- The Lard Jar (like granny did)

For the longest time it was a normal household practice to collect the drippings from frying bacon or meat, but also otherwise animal fat that ended up as leftover from meat preparation in the "**lard jar**": A jar that almost always sat around in the kitchen or pantry, usually easily in reach to collect more lard or grease, and to use it for frying, baking or cooking.
To dispel some romanticism right here: Our grannies mostly did this as a way to save money. Fat was valuable, so throwing it away was not something people did happily, and old lard was even used to make soap.

There are all kinds of myths that try to paint lard and the lard jar as either "artery-clogging poison" or some mythical, amazing source of fat and "granny wisdom". The reality, as so often, lies in the middle – and depends a lot on what kind of fat we are talking about, how hot and how long it was heated, how often it was reused, how it was stored, and how much of it was or is consumed as part of the normal diet.
Here I give you the rundown of what I remember from granny's lard jar and its uses, and what I could find out about it in actual, modern, scientific understanding of what such lard is and isn't . You can then make your own decision if you want to bring the lard jar back to your kitchen.

The best version of such lard or grease is to use only **rendered fat**. This can be created intentionally, like rendering it from pork belly, back fat, and other fatty cuts of meat, but also e.g. from poultry skin, and straining it through a sieve or even cheesecloth. Such rendered and strained fat is the cleanest and most stable version of animal fat you can store for future frying, cooking and baking purposes, and should not be mixed with the contents of the classic "lard jar" (see below).

Drippings and grease on the other hand is fat left over after frying bacon or meat. The fat left in the pan or pot contains not just rendered fat, but also browned proteins, moisture, more or less burned particles, oxidation products from cooking, and if it was used when preparing the meal, or from bacon, also salt.
This is the classic content of the "lard jar" like our grannies or great-grannies had sitting near their stove or in their pantry. It is less stable and spoils faster than intentionally rendered and strained fat (see above), and often carries all kinds of additional flavors beyond "just fat".

Animal fat is not automatically bad, nor are seed oils automatically good – that idea is outdated. Typical pork lard contains roughly equal amounts of saturated and monounsaturated fat as its main ingredients, and a little bit of polyunsaturated fat. The claim that lard is “pure saturated fat” is also false, and actually its fatty acid profile can be closer to olive oil than many people are aware of.
The main fatty acids (from what I could find out) are oleic acid (the same main fat as in olive oil), palmitic acid, and stearic acid. If coming from pasture-raised animals, it also contains vitamins A, D, E, and K, less so if purely barn-kept.

Furthermore, **saturated fat** is probably not the big bad killer of your arteries and heart as some claims made and make it out to be. Overall diet, context of consumption, amount consumed, how it is used, these all matter a lot, just as exercise level, general metabolic health, and other factors that can even be seemingly unrelated to what goes into your mouth and stomach. What is well established is that very high saturated fat intake can – but does not have to – raise LDL cholesterol in many people, and elevated LDL is still strongly associated with cardiovascular risk. It's really a very complex topic.
So a bit simplified to drive the point home: When it comes to using lard or other rendered animal fat, you can be as worried – or as little worried – about it as you would be about cooking or frying with "good" olive oil, or eating fried bacon and other fatty meat.
If you use rendered fat or even drippings from “the lard jar” for frying things, a lot also depends on how hot you fry things (the hotter the worse), how much of that fat ends up on your food versus how much stays in the pan, and your general diet and lifestyle.

You can also use a bit of paper towel to **soak up excess fat from your food** – not just rendered fat or drippings, but also cooking oil – if you are concerned about your intake of fat in general, and saturated fat in particular. Simply place the pancakes, french toast, sunny side up eggs or whatever else you fried one by one on a sheet or three of paper towels, and gently press another sheet or three against it from the top, until most of the excess fat has been soaked up and thus, removed.

One real issue with reused cooking grease, meaning that “lard jar” where grannies of the past, and some people also still today collect drippings and grease leftover from their pans and pots, is **oxidation**. When fats are repeatedly heated, oxygen reacts with the fat and increases the speed of oxidation as the number one "killer" of fat quality.
Repeatedly reused drippings and grease will not just go rancid faster – they will also contain more and more **problematic substances** like lipid peroxides, polymerized fats, aldehydes, and acrolein as one of the typical sources of that “burned fat” smell. These compounds are commonly associated with unpleasant things like inflammation, oxidative stress, and arterial problems.
So the main problem is not the animal fat itself – it is beating that poor fat over and over into a pulp with heat (and even worse, high heat), plus contamination with other substances. Do that enough, and it will start beating parts of your body right back, especially if you consume it a lot.

So collecting the drippings of bacon and other grease from pans and pots and storing it in a "lard jar" (preferably these days in the fridge) does not have to be "bad fat" if collected and used properly. It can be perfectly fine for baking, or for frying your eggs or french toast, and even add delicious flavor to whatever you fry or bake with it.
"Good" animal fat that was rendered at moderate temperatures, or also collected as drippings after frying at low or moderate temperatures, **is relatively heat-stable**, which is a desirable property for any cooking fat or oil you use. By comparison things like corn oil or sunflower oil, which many people use for frying, are way less stable at higher temperatures, leading to oxidation and other problems. If you can choose between some good rendered fat, or even relatively clean drippings collected from a frying session at moderate temperatures, and fresh sunflower oil, you might very well find that animal fat is the healthier choice if you want to fry something.

If you keep **reusing this animal fat** over and over again, instead of just once or at most twice, that's when you start accumulating problematic substances in your lard jar. If you keep collecting drippings and rendered fat from frying or boiling at high heat, that is also when you might end up with "bad fat, bad stuff" in your lard jar.
That's why for example fat from a modern deep fryer – no matter if animal fat or cooking oil – should not be reused, as it usually has been heated at high temperatures, for many hours, and got exposed significantly to oxygen. If you then reuse it, or even many times, you end up with some really unhealthy fat on your hands. That's a completely different beast from saving fresh bacon grease or other drippings for a later cooking session or two.
The real problems are high heat and repeated use, extra so if both combine.

Another serious problem with drippings and bacon grease can be their **additional content**. All those things I listed earlier, like burnt proteins, oxidized particles and other residue, plus potentially quite some salt, can make drippings rather unhealthy – and often make the fat taste rather bad, too, at least eventually.
Those of our grannies who knew what they were doing would not have scraped grease out of a pan loaded with icky brown and black bits, or collected it if it looked pretty dark – that stuff was beyond salvaging. But if some fairly clean, clear grease remained in the pan or pot, that got collected and stored in the lard jar – to save money, and to add delicious flavor to the eggs, french toast, or whatever else got fried in it later. After using such drippings a few times at most, they would not have collected what little brown bits remained in the pan, if any.

Another major problem is **amount and context**. Our ancestors handled significant physical labor every day, ate no highly processed food and little to no trans fats of the kind found in modern industrially processed food, and in general had entirely different dietary patterns. They needed more calories than today's paper pushers, and they didn't habitually fry eggs and white bread loaded with sugar in copious amounts of such collected drippings.
The same general reasons why pizza can be healthy or unhealthy food (depending on how it is made), but usually contains too many calories for a typical office worker to eat in the same amounts as a farmhand, can make rendered fat and even collected drippings perfectly fine to use in moderation – or highly problematic.

So as with many things “grannies did”, this can be a perfectly fine, even money-saving and delicious practice, or highly problematic. Know what you are doing, do it right, and you are fine.

The best way to do this is usually:

- Collect only clean rendered lard, beef tallow, poultry fat, and maybe the occasional bit of bacon grease (which will add salt to your jar, so factor that in when cooking and frying with it).
- Avoid any drippings or grease full of burnt crumbs, breading or other remains of your cooking, as well as any grease that is already pretty dark, or smells acrid, bitter, stale, burned, fishy or paint-like.
- When collecting it, strain it at least through a fine-meshed sieve, or even better a thin old kitchen towel kept around for that purpose, or some paper towel placed in a sieve that is a bit too wide-meshed for proper straining. Coffee filters also work fairly well for the straining.
- Store only the strained, clarified drippings and grease in a clean jar, best kept in the fridge – unless you have a cool pantry room like many of our (great-)grannies had. Technically it is more or less shelf-stable, but it will stay good longer in the fridge, and you can also freeze it well. The proper types of containers for storing your drippings are glass, ceramic or stainless steel.
  Note: When it was stored in the kitchen in the past, the lard jar was usually kept in a cooler part of the room, not right over the stove, and/or turnover was so fast that it did not matter whether it was stored at warmer temperatures or not. For most modern households, that is not the case anymore.
- Reuse it only once, or at most a few times for sautéing or frying. The higher you heat things with those drippings and grease, the fewer times you can reuse the fat without real health concerns. If you ever heat it to the smoke point, that grease is definitely not worth reusing.
- Don’t top up endlessly. Our (great-)grannies might have done that, but they also cycled fast through their grease. So if you notice drippings and grease accumulating in your jar, discard some from time to time and start fresh, or have more than one small jar like this you cycle through with your own system to avoid overly old grease.
- From what I could find, refrigerated clean, rendered fat can stay good for several months, while drippings and bacon grease might be safe to use for 1-3 months. The more the latter contains additional compounds, “brown bits” because it was not properly strained, or otherwise got contaminated, the faster it will spoil. Frozen drippings can stay good for way longer – a year or more might be possible. Rendered fat, if really clean and properly stored, can probably stay good for years in the freezer, but a lot hinges on how exactly you stored it, as with all fats, oils, and in general frozen goods.
- Watch for spoilage. If your drippings or rendered fat smell or taste rancid, sour, fish- or paint-like, bitter, foul or moldy, throw them away. If they show visible signs of mold, rot, foaming, or suspiciously sticky texture, throw them away. Slight, mild browning is normal, but if your collected drippings and grease or clean-rendered fat darken noticeably, it is also a case for the trashcan.

Canned Butter

Butter often goes rancid within days if left unrefrigerated. Salted butter might last at room temperature for maybe 7-10 days at best, unsalted even less. I'll mention more about storing butter under "Fridge & Freezer" below. You can use Ghee (see above) as a replacement for butter of course, as it can double as a cooking fat and a butter-like spread.

Note that while strictly speaking not part of your pantry, you can **freeze butter** with no issue, and properly frozen and stored, it can stay good for many years with minimal to no loss in quality. This can be also a simple way to save money: Buy butter bulk or when on sale, and freeze it.

If you want real butter, **canned butter**, also known as **shelf-stable butter** exists, which tends to have a guaranteed shelf life of 2 years, realistically you can hope for 5+ years, and some people report opening cans after a decade to find it still pretty good – but I wouldn't count on it .
This tends to be more expensive though than normal butter, so think if you really need this, or rather go for ghee instead. If you opt for this, keep in mind how much butter you really use over the course of a week, and decide accordingly what size of cans you actually get. There's no point in buying a giant can if you'll struggle to use it up before it spoils once opened.

Nuts & Seeds

Various nuts & seeds are little powerhouses of nutrition, for the details please read up on each of them yourself. A good selection, like **peanuts**, **walnuts**, **hazelnuts**, **sunflower seeds**, **cashews**, **almonds**, **pumpkin seeds**, **pine nuts**, **pistachios**, and so forth are a good addition to your diet and pantry if you like them.
Check what is cheaper for you, buying bulk or smaller bags, and also whether ready-made trail mixes might be a cheap and good option for you. Some are also quite expensive – pine nuts in many places, for example – so you might rather opt for other nuts and seeds instead which cost less and are still valuable for your nutrition.

Additionally if you like them, **chia seeds** only need soaking and are also a source of ALA (omega-3 precursor), similar to Linseed Oil or **linseeds**, and can easily be added to a variety of meals. Things like linseeds and **hemp seeds** can also be part of your pantry if you like them, they just require a bit more preparation to get the most nutrition out of them without it being a chore, so YMMV about those.

Most nuts & seeds, due to their high fat content, have an official shelf life of 6-12 months, and that is your baseline. In my experience, really well stored nuts & seeds can absolutely exceed this shelf life if you keep them in a truly airtight container with as little oxygen as possible, kept really dry, cool, and dark. If you are lucky some might last 2-3 years, but anything beyond that is really stretching it, and others won't make it that long before they smell and taste rancid, bitter or otherwise foul, and have to be thrown away. Of course if their texture becomes soft, spongy, slimy or otherwise suspicious, that is also a reason for immediately throwing them away, as are any signs of mold on them.

Some nuts & seeds are also more sensitive than others. Walnuts or pine nuts, for example, are notorious for going rancid way faster - expect roughly half the shelf life out of them. Others, like whole sesame seeds and linseeds, can last 50-100% longer. If you want to store nuts for longer, consider vacuum-sealing them – in glass jars or reasonably sized bags – or buy them with their shells still on, which can add up to 1-2 years to their shelf life . You can also freeze most nuts & seeds easily and also add at least another 1-2 years if not more to their shelf life that way, or at least somewhat extend their shelf life in the fridge.
If you want to increase the shelf life, nuts and seeds are one of the few food items where vacuum sealing – if you want to get such a device (see above under "About Storage") – really can make sense, because oxygen is their biggest enemy, eventually making them go rancid. Oxygen, and too much warmth. That's also why the other decent choice if you want to increase their shelf life is shoving them into the freezer in an airtight container, or simply in the airtight bag they came in.

Note that roasted nuts tend to store less well, so if you want a long shelf life for your nuts & seeds, stick with unroasted. Peeled ones also have a somewhat shorter shelf life, as the shell offers a bit of protection against oxygen and mild moisture.

By and large, nuts and seeds usually don't spoil in the sense of becoming unsafe to eat. As long as they're not contaminated (mostly by mold, which is a real health risk), they'll just taste worse and worse, while the nutrients and other healthy substances in them break down. That said, they can absolutely go moldy, rot or otherwise truly spoil and then are unsafe to eat, so don't ignore the typical warning signs!

Peanut butter / Peanut flour

Cheap, and with a very long shelf life of 2-3 years or more when stored cool and dark in an unopened jar, peanut butter and flour are a great pantry staple. Rancidity tends to be the biggest issue with them, besides contamination leading to actual spoilage, of course. If the oil in a jar of peanut butter separates, you can mix it back in with a clean spoon and a bit of elbow grease.

Nutritionally, peanut butter is mostly just peanuts in spreadable form, and also a great addition to various sauces and other recipes. It contains a solid amount of protein (flour even more so than butter), fiber, and important micronutrients.

Always opt for 100% pure peanut butter, not loaded with additives and sugar, for health but in some cases also shelf life reasons. Some additives can increase shelf life, but many are questionable from a health standpoint. Inform yourself if you want to know more, it's a complex topic. Glass jars are usually preferable over plastic jars: They are easier and more versatile to reuse, better for shelf life, and won't leach anything into your food.

Vegetables, canned, pickled, dried

A no-brainer, I wager: t's just veggies that have been dried, pickled, or canned – the kind most of us are used to from the supermarket. If you get such veggies in glass jars with twist-off lid, you get the added benefit of accumulating jars over time that you can reuse as storage containers for all kinds of things, including food, or even for making your own home-canned preserves if you're into that and when veggies / fruits are on sale and cheap.
Have a nice selection – carrots, pumpkin (both a great source of beta-carotene and various other nutrients), beetroot, pickled sauerkraut, or bell peppers, and whatever else you might like in your pantry, and you won't run out of veggies any time soon.

Be aware that some nutrients can get at least partially lost through the canning process. This does not mean canned and dried veggies are no longer nutritious. Overall, canned and dried veggies are nutritionally way better than their reputation, and very few nutrients get lost, or they remain in the surrounding liquid, which you can drink or use in other recipes (see below). This makes vegetables far more suitable for canning than fruits, which can suffer far more nutritionally from the process.
Some fermented veggies actually gain additional nutrients from the fermenting microbial activity, mostly certain B vitamins and K2, sometimes C. If pickles or other fermented food are in a further step pasteurized or sterilized, some vitamins (like B1, B9 and C) will be reduced or destroyed, while others are fairly heat-stable. As for the probiotics often cited as a health benefit of fermented food, heat treatment is highly destructive: What kills the microbes that spoil food also kills the probiotic ones. Once boiled, you gain no probiotic health benefits from such fermented food. In exchange you get an even longer shelf life of the canned and still tasty, otherwise nutritious pickled or fermented food. Minerals and heat-stable vitamins in canned vegetables are not as such reduced from the heating process, but some can leak into the surrounding water.

Canned vegetables have an incredibly long shelf life – easily 3-5 years, often actually closer to 5-10, with optimal storage even decades. "Shelf life" for canned food is a bit relative: The food slowly loses nutrients and flavor over time, but can potentially stay "fit for human consumption" if you don't mind the changed taste and just need calories even if eventually pretty low on nutrients. People have found jars made by granny before WW2. The food had lost most of its color, nutrients and probably flavor, but according to lab testing it was still technically "fit for human consumption" after all those decades! Not that you would enjoy that kind of meal very much, I wager…

Canned pickled / fermented veggies & kraut, like sauerkraut, bell peppers, mixed pickles and so forth, have a similar shelf life to their non-fermented alternatives, so roughly 2-5 years, often even 5-10 years or more are possible. Thanks to the vinegar or brine they're made with, they tend to keep even better and longer than veggies canned without such an acidic environment or additional preservatives – there is a reason why it is one of the oldest ways of preserving food. There are even anecdotal reports of people eating decades-old cans with no ill effects and still "acceptable" taste. Even if technically still "fit for consumption", the taste and nutritional value of such canned fermented veggies will suffer over time, just as with all canned food.

A major drawback with pickled and fermented veggies or kraut that got pasteurized and canned: the vitamin C they originally contained is partially or entirely gone, and so is the probiotic value. You get longer shelf life in turn for that. Note that things like sauerkraut aren't entirely without vitamin C after pasteurization – it's just no longer a major source. What you get from it though is some other nutrients, a solid amount of dietary fiber (including as prebiotic "fodder" for your gut microbiome), and most of the metabolic byproducts of the fermenting bacteria are also still present. Even the dead, formerly probiotic fermenting bacteria are potentially "postbiotic". Some nutrients actually become more bioavailable through heating – lycopene in tomatoes being a prime example.
Fermented food is also often an important source of vitamin K2, although the amount can vary a lot depending on the food itself and how it was fermented and processed. Minerals like potassium, calcium and magnesium are not affected by the pasteurization. Think of such fermented food – sauerkraut included – after pasteurization as "pretty good veggies with a nutritional fermentation bonus", not as a reliable source of vitamin C (though not zero) or a wonder-source of probiotics.

To really keep pickled "living", **unpasteurized fermented food** like sauerkraut, pickled paprika etc. free of spoiling beyond a few weeks to very few months at room temperature (or mostly even also if stored in the fridge, with a bit more wiggle room), you have to maintain it well, and there are a few things to keep in mind for that. If you want to learn how to do such, please look it up, there are explanations for it available online, but it requires quite a bit of effort, and there are real risks involved if you mess it up.
The ideal conditions for handling and long-term storing of unpasteurized fermented food are quite demanding, though: consistently cool temperatures, in perfectly airtight containers, regular skilled maintenance every few weeks, and very clean handling throughout. Well-made and well-kept like that, living fermented food can stay fit for consumption at best even 1-3 years from what I could find in anecdotal reports. Even with perfect maintenance and handling taste and texture will shift over time though, and not always in directions you'd enjoy. Just because people did it in the past out of necessity doesn't mean it's a great practice still today.

Nowadays with the availability of canning methods the main benefits of such non-pasteurized pickles are the vitamin C content – which made sauerkraut a go-to on long sea voyages to prevent scurvy – plus the probiotics that are good for your gut health. In the past, before canned food, well maintained pickled food was one of the few ways to actually store veggies for more than a few weeks or months, but it was normal to make new pickles every year.

Inform yourself about the details of the various types of such canned veggies, as in some cases nutrients like certain B vitamins and minerals (potassium, magnesium, various trace minerals) can leach into **the surrounding liquid**, and it is actually better to use that liquid from the can or jar in your meals. In other cases that water can contain problematic substances like FODMAPs or oxalate, so you'll have to decide case by case. The water often also contains a high sodium content – if that is the case, simply factor it into your cooking, using less or no added salt, bouillon, miso, soy sauce, or similar sources of sodium, and slightly adjust the recipe to compensate for the missing non-salt component of those flavoring ingredients.

The same rule applies as with all canned food: If the lid or container bulges, or if there is no popping or hissing sound when you open it (except for tetra packs), don't risk it – just toss those veggies. Otherwise your eyes, nose and for the final test tongue will usually tell you if something is still good or not – just as it did for our ancestors.

Store them dry, dark (especially important for glass jars), and not too warm, and with your selection of canned veggies you have a key ingredient to combine with your carbs (rice, pasta, potato powder, oatmeal) and protein sources (legumes, texturized plant protein, canned fish or meat) to create a variety of wholesome, nutritious meals that taste good and can be seasoned in all kinds of ways. With pre-cooked ingredients from jars and cans, you can even toss together legumes and veggies, and soak texturized plant protein in the liquid the veggies came in. You need zero cooking and no added water to create a meal from these three things – just add seasoning and you have a nutritious, and if well done, tasty meal.

Lastly there are **dried veggies**, from the famous sun-dried tomatoes (usually with salt), to freeze-dried mixed vegetables like you typically need for veggie soups and many other recipes, to dried, raw or roasted onions. As long as no fat is involved (as with roasted dried onions), these things can have varying shelf lives depending mainly on how dry they actually are and of course how well you store them. I give you just some examples here so that you can get a general sense of how these things store and can be used, but of course there are many more creative options.

Sun-dried tomatoes tend not to be truly, fully dry, but if stored dry, dark and in an airtight container they tend to have a minimum shelf life of 6-12 months, and often way longer. When optimally stored, dried tomatoes just get harder and harder, and potentially even almost leathery over time. They will lose aroma and nutrients, but can stay safe to eat for years, even if their nutritional and taste value is eventually “cardboard levels”.

Dried veggies you can sometimes get very cheaply in bulk. They come in three tiers of shelf life, if properly stored: air-dried lasts around 1-2 years, hot-dried at least 1-3 years, and the most expensive type, freeze-dried, can last 5-10 years and more. Freeze-dried veggies also tend to have the best nutritional profile for heat-sensitive nutrients, and the best texture when rehydrated.
The “best-before” date can mean surprisingly little for dried veggies, as long as you store them really dry, dark, and in an airtight container. The more moisture remains in them from the drying process, and the more they come into contact with moisture thereafter, the shorter their remaining shelf life usually is, and the higher the chance of spoilage and degradation.
That's why poorly stored freeze-dried veggies can go bad before superbly stored air-dried ones – storage conditions can matter more than the drying method itself. As long as there's no rot, mold, or other signs of contamination, dried veggies can remain technically edible for a long time. For the most part well-stored dried veggies just slowly lose aroma and some nutrients over time, until they taste like straw or cardboard and/or crumble.
As with most dry food, check with your eyes and nose, and if they seem fine, do a final test after rehydrating a handful – with your taste buds. If they look, smell and taste normal, they are most likely still okay to eat.

These lightweight dry veggies can actually be cheaper than fresh veggies of the same volume and weight once rehydrated, and thus an alternative or addition to your canned veggies. They are especially useful if you just want to toss together a quick soup with some veggies: Heat water, add a bouillon cube or powder, add the dried veggies and whatever else you'd like (texturized plant protein to soak and take on the flavors of the bouillon, meat, fish, canned potatoes, etc.), season to taste, and you've got a quick, hearty bit of food for the soul.

Mushrooms, canned or dried

The list of mushrooms fit for human consumption is too long for me to talk about here in detail, and they exist canned, dried or otherwise made shelf-stable also in a great variety of ways. Some, like shiitake, can even double as a seasoning if prepared the right way, like as a dried powder.

Generally speaking mushrooms tend to be rich in protein and a variety of nutrients, and can be a great addition to your diet, but the details depend a lot on the type of mushroom, where and how it was grown, and how it was made shelf-stable. The nutritional content of mushrooms depends a lot on the soil they grew in, the type of light they were exposed to, what added nutrients may have been involved, and how they were processed. So even two mushrooms of the same type, grown in different soil and with different light exposure, can have very different nutritional profiles.

A warning about collecting mushrooms or canning/drying them yourself: Mushrooms, just like meat or legumes, can be serious breeding grounds for botulism if improperly canned, so be careful about self-canning mushrooms, even though it's fine to do so if you know what you're doing.
Furthermore, please do not go collecting mushrooms yourself, as plenty of edible types have other, similar looking relatives that can be poisonous, some even lethally so. Getting good enough at safely picking wild mushrooms takes a lot of time and practice. A single guidebook or a trip or three with "a buddy who knows their stuff" won't cut it.

Even if you know how to do this properly, we have by now another major problem when it comes to wild mushrooms: Chemical contamination. Mushrooms are incredibly prone to storing toxic substances, including heavy metals and radioactive material within them. To give you an idea: Even four decades after the Chernobyl catastrophe (1986), wild mushrooms from Ukraine to Germany are often still contaminated to this day.
Even wild boars need to be tested before eating them: Contamination from Chernobyl rained down in microscopic doses across parts of Europe, accumulates in wild mushrooms and tubers to this day, and gets further concentrated in wild boars that consume large amounts of both. The radioactive material thus concentrates first in the mushrooms and tubers, and then even more so in the boars.
Sadly in many parts of the world soil contamination even in seemingly "natural" regions like forests where mushrooms grow wild can be a real problem – and you might not always be aware of it So if in doubt, stick with commercially cultivated mushrooms under controlled conditions.

Pureed Tomatoes (Passata) in Tetra Pack vs Canned

You can get pureed tomatoes as canned food, and they have an even longer shelf life than other canned veggies, as long as no corrosion affects the can or lid. In tetra packs they can have a shelf life of easily 1-2 years, with even 3-5 years and more possible. This hinges on the tetra pack remaining undamaged, airtight, and of course unopened. If the package isn't bloated or damaged, and the passata smells and tastes normal, it is most likely still fine to eat well beyond the "best-by" date, with just some loss of flavor and nutritional value over the years.

Compared to canned, the benefit of tetra pack storage tends to be slightly better flavor, especially after a while – but at the price of a somewhat shorter shelf life. It is unlikely you will ever have to deal with that issue, though, given how shelf-stable it is even in a tetra pack (years!), and how fast you might go through them. The benefit of a can is the more sturdy container of course, slightly longer shelf life, and if you have need for it, you got a tin can to use for other things (especially if opened with a can opener that creates no sharp edges).

Whether from a can or tetra pack, the sterilization usually destroys a lot but not all of the vitamin C (20–50% remains, from what I could find), so you get at least a bit out of them. Of course they are the foundation for any tomato sauce you might want to make, can be used for goulash (with ready-made goulash powder if you don't want to mix your own), and other meals.

They are also a source of liquid – hopefully you'll never be in such dire straits that you have to think of them as a liquid source too (i.e. during water shortages). Even if liquid is not scarce, there are recipes where you deliberately cook things in pureed tomatoes, no further water needed. As long as you like the taste, pureed tomatoes are a great part of any pantry, as you can quickly turn otherwise bland food into a whole host of delicious things.

Note that heating pureed tomatoes – especially with just a pinch of sugar or a few drops of honey – can enhance the umami (savory) flavor of many meals and sauces. If you can taste the sweetness, you have already added too much for the purpose of enhancing the flavor and savoriness.

Tomato paste, tube or canned

Yes, in theory tomato paste is "pureed tomatoes, just with less water", but that's the point of this thing. Pureed tomatoes stay good for a good while, but tomato paste due to its low water content and higher sodium content has an incredibly long shelf life plus low storage volume, at the cost of (even) less vitamin C compared to pureed tomatoes.

Mix the paste with a bit of water, and you can get a similar texture and taste as with pureed tomatoes. Furthermore, a bit of tomato paste can add umami (savory) depth to many recipes, especially if heated – even more so with a bit of honey or sugar, and extra so if slightly caramelized. Depending on how exactly you use it, like letting it caramelize, cause a Maillard reaction, adding a bit of sugar or honey, or a few drops of lemon juice or citric acid, tomato paste can enhance, deepen or balance the flavor of various (usually savory, or sweet-sour) recipes.

You can even mix it with anything from fresh cheese to ghee or butter, maybe with a bit of bouillon powder and some additional seasoning, and quickly create a spread that's truly packed with flavor.

Unopened, sealed tubes of tomato paste can stay good for many years past their "best by" date – up to a year beyond it is almost always uncritical. After that use your senses, as so often, and provided the storage container was ok.
As a rule of thumb: 1-2 years past the best-before date is almost always fine. After 3-5 years it's most likely still perfectly edible, but taste and nutritious quality have probably declined to a degree. Anything from 5–10 years on might still be fine and potentially even longer, but the loss of quality becomes more and more noticeable. This is especially true if the container or paste weren't great quality to begin with, or storage conditions were less than optimal. The longer and the more poorly stored, the greater the risk of the container leaking and contamination (especially microbes) getting in and spoiling the paste.
Once you open the container, you should store it in the fridge, although it can stay okay for a while even at room temperature due to the high sodium and relatively low water content, especially if stored in a tube = less contact with oxygen, less surface area for microbes to get in.

There are also varieties that have pureed veggies added already, which makes such "tomato & veggie paste" even more interesting as a versatile flavoring method.

Whether you get tomato paste canned or in tubes is up to you. Tubes have the benefit of less contact with air (and thus, potential oxidation / spoiling processes to be triggered), and easier to just squirt out what little tomato paste you need right now. With cans you get something more sturdy, but usually also with lower shelf life once opened, and more care is needed when removing just a little bit, lest you contaminate the rest.
Keep in mind that tubes, just like cans, really don't like moisture (corrosion risk) and are a bit less sturdy. I speak from experience when I say that an unexpectedly "broken" or punctured tube of tomato paste can create a surprising mess in your storage boxes, if not detected early enough…

Fruits & Berries, preserved or dried

Fruits and berries are great sources of a variety of nutrients and dietary fiber. Most of these survive typical preservation methods well – the main exceptions are vitamin C, certain B vitamins, and some polyphenols.
Vitamin C in particular is not heat-stable, and typically among the first nutrients to break down. You might still find some vitamin C in canned fruits & berries, but don't expect too much in this regard. This is a major reason why I recommend having supplements in your pantry (see below).
B-vitamins can withstand most preservation methods better, but some can also be reduced. Being water-soluble, they can also seep into surrounding liquids, like the water in canned fruits and berries.

As a rule of thumb, most of these various types listed below stay good 1-2 years, and can be okay but with declining nutritional value for 3-5 years if stored well (dry, dark, cool). If you want a good selection, I recommend as an optimized mix some dried apricots and dates, dried (not fried!) bananas, some applesauce or apple purée (dried apples optional), and maybe some raisins or canned berries (including puréed) . Anything else as you like it as treats.

Dried fruits & berries generally have an excellent nutritional profile, with of course their full fiber content, but as they are so highly condensed they can have a laxative effect. So be careful, not just with the prunes famous for it, as other dried fruits & berries, from raisins to dried papaya, can give you a very interesting short-term subscription to the loo ;^)
Consider these more of an addition to your nuts & seeds, to be enjoyed in small amounts if you like them, or if soaked in water potentially also for cooking or baking. They are better than no fruit at all, even if they come with reduced vitamins and polyphenols. The other nutrients are mostly preserved, as is the dietary fiber content.
Their biggest enemy is humidity and oxidation (air, light), and the more moisture they still contain, the less well they store. This means that your bone-dry banana chips could potentially keep well for decades before eventually going stale, while only partially dried dates or apples can eventually go bad – but you can usually smell and taste it if they do.

Another typical form of preserving fruits & berries is of course **canned fruits & berries**: They swim in a liquid of juice or water with added sugar, then get sterilized through boiling. The latter destroys most of the vitamin C, and over time some nutrients will leak into the (often sugary) liquid they sit in. Since this liquid is basically "sugary water" with a low nutrient content, it's usually not worth drinking unless you like it and don't mind the sugar, or genuinely need it – like if there's an issue with your water supply, or you need every calorie you can get.
If you need something to sweeten a recipe though, this sugary-fruity water can absolutely be used, and saves you the honey or sugar you'd be using otherwise for the recipe, as long as the extra fluid you are adding is no issue.
A little "treat" you can do with this sugary, flavorful liquid, maybe with a bit of extra flavoring from jam or similar: Pour it into an ice cube tray, cover with plastic wrap, poke toothpicks or small food-grade sticks through the wrap, and freeze. There you go – **mini popsicles** for the price of a bit of plastic wrap and plastic sticks / toothpicks (technically reusable if you clean them properly).
The shelf life of canned fruit is usually long beyond the best-before date, depending on the type of fruit or berry and how exactly they were done. Expect typically around 2-5 years, if well preserved and stored even a decade or more. You will usually notice when it's bad ba texture, scent and/or taste: Anything slimy, or that tastes or smells alcoholic, sour, bitter, foul, or rotten.

Applesauce, apple purée, and similar fruit or berry purées have been a staple in many pantries for a long time – and for good reason, given what a comfort food they are. Most of the vitamin C is destroyed from the heating so consider it at near-zero, and the heat-sensitive polyphenols are also at least somewhat reduced. The other nutrients and fibers, including the valuable pectin in apples survive the process quite well.

The shelf life is usually comparable to the aforementioned canned fruits and berries – 2–5 years or more, while tetra packs may last about half as long. As an ingredient for cooking, baking, or simply as comfort food, it's great to have some around if you like the taste..

Jams and jellies might be tasty for the sweet tooth, and by all means have some in your pantry if you like them. Nutritionally, though, they are the poorest of your "fruits &berries" choices , as the vitamin C is usually largely destroyed. In terms of other nutrients you also get the least per volume compared to other options, while containing tons of sugar. The latter might be great in crisis situations where every calorie counts, but otherwise it makes jams and jellies a pretty poor nutritional choice.
The shelf life of jams & jellies though is enormous as long as kept in the vacuum-sealed original container: easily measured in years – in some extreme cases, even decades past the best-before date. Jams & jellies will lose flavor and what remains of nutrients slowly over the years though, so don't keep them around forever, either. Due to their lower nutritional value per ounce, you can file jams and jellies more under the "Food for the spirit" chapter further below than as a proper part of your nutritional pantry.
Note: You can also use jam as a **replacement for syrups to flavor water** as a beverage, and it is sometimes cheaper than syrups sold specifically for that purpose. If you do that, choose a jam that contains little to no "fruity bits" to get the most out of it for flavoring water.

Freeze dried fruits & berries, whole or as powder, probably have the best nutritional value of all your pantry options when it comes to the "fruity section". They can retain a good chunk of their vitamin C (from what I found, varying a lot between 20-80%), and their other nutrients are almost entirely kept intact by this preservation method.
Of course some of these nutrients, especially vitamins, will slowly degrade over time, mostly from light and contact with air. So store these dry, dark and airtight, and you have high quality fruits & berries that can last 5-10 years or even way more under perfect storage conditions, some claim even 25+ years. For the time horizon of a typical private pantry, you can consider their nutritional value as essentially stable after preservation.
These qualities make freeze-dried fruit and berries one of the best nutritional options for long-term storage. Unfortunately their excellent qualities come at a steep price for your wallet, and the texture (unless powdered) ranges from quite hard to outright crunchy, requiring water to rehydrate properly. Decide for yourself if these are really worth your money.

Packaged meals (canned & otherwise)

Ready-to-eat canned meals, like beans in tomato sauce, ready-made stews, the famous tomato soup, or other canned meals are often ready to eat out of the can if you don't mind it. They can be a great addition to your pantry for when you don't feel like cooking or the power is out. Remember: If you home-can such ready-to-eat meals, I highly recommend boiling them before eating as a safety precaution.
Condensed soups that need just a bit of water save storage space and are quick and easy to prepare – provided you have enough water, of course. If you eat them undiluted, keep in mind you're taking in a significant amount of salt without the water to balance it out.

There are also soups that come **highly condensed** in tubes or in sausage-like packaging, which you just dissolve in water for a ready-to-eat soup. Some are so thick as to be almost solid, enough that you can even eat them as a paste or cut them like ham or cheese, and put them on bread if you like that – usually they are pretty salty though if eaten like that.
One of the oldest industrial-produced ready-to-eat meals belongs to this category: Erbswurst, which was originally developed as an “iron ration” for the Prussian army in the 19th century, and remained a staple for the German military through both World Wars. Similar cubes or "cakes" of instant soup now exist in many variations around the world, and likewise just require added water and boiling. Depending on where you live, you might find them dirt-cheap in some half-forgotten aisles of your supermarket, or only available as stupidly (and pointlessly) expensive “survivalist food” – sometimes even both at once.

Keep in mind though that these types of canned / preserved types of food or ready-to-eat meals often contain unhealthy amounts of sodium or other food additives. If you care about your health, read the label and make sure the ingredients are all fine. A long list of additives is often a sign that low-quality ingredients and shortcuts were used, with the resulting quality issues then masked by those additives. Well-made packaged meals, done properly with decent ingredients, can be just as good as homemade. Depending on the exact price you can get decent food for a decent price – maybe cheaper still if bought in bulk – and have it on hand, ready to eat even when you can't or don't feel like cooking.
Their real shelf life rather than the best-by date can vary a lot depending on the packaging and actual ingredients. As a rough guideline, go by the contents: if it's just veggies, treat it like canned veggies; if it also contains legumes, treat it like canned legumes, and so forth. You always go by the shortest shelf life among all the ingredients.

Instant ramen noodles – in cups requiring just hot water, or in plastic packages – are another ready-to-eat meal many people know and love, and they can have a shelf life extending years beyond the best-before date. They, too, can contain a lot of sodium and questionable food additives (see above), which can also shorten the shelf life. Plain blocks of ramen noodles are usually a better choice for shelf life, and easily seasoned in whatever way you like with the contents of your pantry. If you like and eat ramen anyway, a few packages of plain instant ramen noodles can be nice to have, all the more so if they're significantly cheaper in bulk.

Packaged dry meals, like the famous “mac & cheese” are essentially a variation of instant ramen noodles, and cover a wide selection of dried food, with a good shelf life if properly stored, and requiring minimal preparation except maybe adding water. Some can be very cheap, while others cost a stupid amount of money (especially freeze-dried ones). Whether they are worth your money, and something you’ll really also eat and rotate over time is up to you.

Note for all of them: The more ready-to-eat meals contain fat (oil or as part of the ingredients), the more they contain dairy products or a lot of protein (meat, fish, legumes), the lower their potential shelf life tends to be, and the higher the chance of going rancid or otherwise bad.

Note on saving money and nutrition: Most of these ready-to-eat or otherwise pre-prepared meals offer poor "bang for the buck" in every way. They offer less nutrition than a meal tossed together from basic ingredients, which requires minimal cooking skills. The food industry often uses lesser-quality ingredients, and disguises this by various tricks. These types of pre-prepared meals also tend to contain far more sodium and other, at times questionable food additives than really necessary. You are paying more to get less nutrition, so that you don't have to prepare meals yourself. That said, there's still a place for such pre-prepared meals – under the right conditions, especially for those of better quality, or simply because you like some of them. Just be aware of the tradeoffs.

Vitamin C

Vitamin C is the nutrient that suffers the most from common preservation methods like boiling or drying, and also degrades over time in typical preserves (non-sterilized sauerkraut being one of the few exceptions, up to a point). You need a daily intake of Vitamin C for a wide variety of physiological functions, so skipping it is not a good idea. Fresh fruits, tomatoes and bell peppers, as well as certain veggies, tend to be the best sources (inform yourself if you want to know more), but it's handy to have a supply of vitamin C you can pop when you need it: Whether as a booster (usually up to 1g/day) when you're battling a head cold, or when for whatever reason you don't have enough fresh sources of vitamin C right now.

A big bottle of several hundred 500mg or 1g pills of Vitamin C (usually from Acerola, or even cheaper synthetic ascorbic acid) is good bang for the buck: Even the more expensive acerola costs you maybe 15–30 bucks depending on size, and that stuff, if stored really dry and dark (humidity and light are the big "killers") and not too warm (heat kills vitamin C!), stays good with minimal degradation for a very long time – handy for topping up the vitamin C your pantry might otherwise fall a bit short on. Of course that's no excuse to skip fresh fruit if you can get it!

With pure ascorbic acid the shelf life is easily 5-10 years, potentially even longer (with exposure to air causing a very slow degradation over time), if kept really 100% dry, dark and in an airtight container.
Vitamin C from acerola contains not just ascorbic acid, but also polyphenols, enzymes, and plant matrix, all of which can be beneficial for your health. It comes with the drawback of the shelf life being a bit lower, usually, even if properly stored, after 2-4 years the vitamin C and antioxidant content slowly declines year by year. They usually don't go bad, just slowly lose nutritional content over the years after that .

As powder you can even dose yourself really precisely if you know how to measure well. With pills, I'd recommend ones you can bite a piece off, so you don't always have to swallow 500mg or 1g whole, but can take a smaller dose. Personally I prefer to have my "iron reserve" of a small jar of some dirt-cheap ascorbic acid powder that lasts for "ages", plus a big bottle of acerola vitamin C as my steady go-to – and even 300–400g (!) of acerola pills have never made it much beyond the 4-year mark, or more than 1–2 years past the best-before date, because head colds happen, fresh fruit isn't always at hand (or is simply too expensive), and so on.

Nutritional Supplements

This category covers all other potential nutritional supplements besides the critically important vitamin C (see above). You know yourself or can inform yourself which supplements might make sense for you, and if needed / wanted you can learn a lot about nutrition in one go and might end up making much better choices for your health.

It might be wise to really look a bit deeper into the nutritional value of the total content of your pantry (and general diet), so you can see where you have real gaps: For those needs and for pantry-purposes, get the relevant supplements, like (multi) vitamin supplements (A, Bs, E, D, K), omega-3, choline, calcium, magnesium, selenium, zinc, iodine (especially if you don't eat fish or algae!). I have to mention here specifically and again vitamin D, especially if you don't get much outside, live in a region with not enough "sun power" for most of the year, and don't eat enough fatty fish, eggs, liver (delicacy in some parts of the world, offal in others), fortified dairy, or other D-rich products like UV-exposed mushrooms as dietary sources for vitamin D.
An ovo-lacto vegetarian will have utterly different potential supplement needs than a vegan, but also a pisco-vegetarian, or an omnivore. Depending on what specific things you like and eat a lot, or really don't like and thus won't really eat even if it could technically cover your nutritional needs (but unhappily so) can so vastly change what might make sense in supplements or not that you really have to look into the nutrition and nutrients of your specific type of diet to get a good gauge of that – your body will thank you.
Make no mistake: Most humans these days, in many parts of the world, are at least sub-clinically deficient in at least some nutrients. Just because you don't notice any symptoms doesn't mean your body isn't running a bit low – which might be relatively harmless, or could have a serious impact decades down the line. Even scientists do not yet fully understand the interplay within the vastly complex field of nutrients – some of which may still await discovery – together with the impact of individual gut microbiome (still being researched), individual metabolism (also still actively being researched), the long-term effects of even "sub-clinical" deficiencies, and sometimes even what actually constitutes a deficiency.

Understand what different versions of supplements really do, like the difference between magnesium citrate and oxide and glycinate and taurate and lactate and sulfate. Different types of substances are often sold as the same general type of supplement, but their actual effects can be significantly different. If you are new to this, don't overwhelm yourself. Learn about one supplement at a time, at your own pace. You don't have to get it right all at once, you have to get it alright eventually.

Check prices vs content when you buy supplements, because the actual content of a bottle vs. what you really get for your money can vary massively. Don't go by "X days' supply" or whatever, as regulations on nutritional supplements beyond basic health & safety standards are limited, and many brands engage in a lot of shenanigans there. You can end up easily paying two or three times what you would have to with a bit of comparing real content and prices vs. your actual needs. Calculate the daily dose for your real nutritional needs, and then compare "cost per day for myself" among different offers, not whatever the manufacturer or seller claims on the package with "supplement for X days" or "X pills".

Also usually go for mono-supplements, so that you can mix-match according to needs, and don't end up potentially overdosing on certain things that can appear in several of your multi-supplements at once. Even your diet can make a difference in what is a decent dose per day: If you had no fish for a while, having some iodine is wise, while at best wasteful if you just had a lot of fish today. If you had a lot of food today containing magnesium, and threw the ever-same magnesium supplement on top, you might give yourself an interesting subscription to the bathroom.
The only exception to this general rule about mono-supplements is if you buy just one general "multivitamin" and multi-mineral supplement with no real overlap, while having a very stable diet so no adaptation is needed, or maybe even just to stash those away less for your daily intake, but to have as a spare for a real crisis, major supply disruptions, or other such things we all hope to never experience, but some of us might have to go through at some point in our lives. In such a situation ensuring you are reasonably well-supplied with those “core” vitamins and minerals your body needs daily or at least weekly can make a significant difference in your mental and physiological capabilities when you need them the most.

Check how long these things you might want / need really store, including potentially beyond their "best by" date, which is not necessarily their real shelf life if stored well: Many supplements stay good way beyond that, but some absolutely do not, or need special storage conditions to last even up to the "best before" date or a bit beyond. Also inform yourself how to store them well, which usually is the usual “dry, cool / not too warm, and dark, with limited air contact”, but there might be exceptions from the rule – e.g. some do even better in the fridge, others really do not like refrigeration at all, and some store best in the freezer.
A good example for special storage needs are things which are **mostly oil-based**, like **omega-3** as **DHA/EPA** from fish oil or algae oil, or **vitamin E**, which also typically comes in an oily matrix. They have a genuinely limited shelf life and after their best-before date they can really lose effectiveness fast, or even go rancid. Here is a trick: If you shove them into the freezer, you all but hit the pause button on oxidation and degradation of their nutritional value (up to a point, not endlessly). So if they are cheaper if you buy them bulk and you genuinely need / use them a lot, you can portion them off with just about as much as you will need the coming months, kept in the fridge (which extends shelf life) in an airtight, ideally dark container. The rest you can pre-package already in similar containers and shove them into the freezer, after writing down when you froze them as the “pause date” on their shelf life.

Herbs & Spices

Herbs and spices: Not needed to feed your body, but absolutely needed to feed your soul, because who wants to eat plain rice, pasta, mushed potatoes, legumes, veggies and so forth endlessly! You’d lose your appetite and morale fast that way!
Find a good supplier of really good quality, because that also affects shelf life. A bag of curry powder or powdered onions can stay good for flavoring for several years if good quality and stored exceptionally well, or taste like sawdust within very few months (if not right away) if bad quality and badly stored.
Good herbs & spices do not have to cost a lot: They might cost a little bit more than the crappy

stuff, but long term they end up being cheaper than the cheap crappy stuff as you need less of them, and your tastebuds will thank you, too. Herbs & spices are one of those things where going too cheap is not a wise choice, as the overall impact on your wallet will be minimal given how little you usually need in dosage, while the quality of life will be much enhanced thanks to better taste. If you use very little over time the better quality even if costing a bit more might even save you in the end money, as it tends to stay good longer.

Keep a good eye on your stocks of herbs & spices, because **sudden price shocks can happen** especially with some types of herbs & spices, like if the harvest of vanilla fails in one of the main regions where it's produced, and you can end up paying 2-3 times more than usual for a full year. So with your herbs & spices, this is probably one of the main categories where keeping at least a year's worth or more on hand can make sense. That way price shocks usually won't hit you that badly, you can easily "skip a bad harvest year" and buy when prices are more normal again.
If you buy your herbs & spices in bulk when they're cheaper that way you can also then just keep a small amount in your kitchen for your regular use, and the rest you stash away in your "spice & herbs box", individually in airtight bags or containers so they don't influence each other with their aromas. You then just refill your little containers in your kitchen when they go empty from your "spice & herbs box", and rotate the content of said box and its bags just as everything else, depending on your use rate.

One could argue endlessly whether freshly ground is better for some spices or not, like pepper, mustard and so forth – that's up to you. What is not up for debate is that ground spices generally don't stay good as long as the whole versions (whole grains, sticks, and so on), and the latter have maximum aroma when freshly ground. So think for yourself what makes sense for you, also depending on the specific spice (or herb).
Note also when I speak about "stay good", I am talking about "tasty" more than "fit for consumption". As long as it doesn't smell stale or show other signs of decay, rot, or mold, it is probably still fine for consumption, just won't taste good and thus becomes pointless to use (and have little to no medical properties anymore, either).

- As a rule of thumb, **whole spices** (like pepper corn seeds, cinnamon sticks etc.) tend to stay good at least 3-5 years if perfectly stored dry, airtight and dark, potentially even longer – you just need an appropriate peppermill, mustard mill etc. and/or a good mortar & pestle.
  Never use the same spice mill for different spices without massively cleaning it first, and clean your mortar & pestle well after use, as small bits can stick to it and flavor the next batch, or at worst leave a mild rancid taste after sitting there for a while.
- **Ground, powdered spices** tend to stay good for 1-2 years, some even up to 3, rarely 4, but they definitely lose aroma faster over time.
- **Dried herbs** tend to be good at least for a year, but if you store them really well they can reach a similar shelf life as ground spices, a bit depending also on the type. I have had cases where even after 5+ years an old bag or jar of some perfectly stored dried herbs had lost maybe a little bit of aroma but was still very flavorful to use, while others had turned to "sawdust quality" within 1-2 years max.

- **Spice mixtures** like curry powder, goulash powder and so forth can be a – no pun intended – mixed bag: Some last as well as already-ground spices, others go bad as fast as, or faster than, dried herbs. Then again, I have here an old bag of some rarely-used type of the various curry powders I might use, and even after more than 5 years it smells and tastes insanely aromatic. So this is up to your personal experiences over time, and of course again quality and proper storage go a long way.

As another rule of thumb for spices & herbs: The more oil they contain, the higher the chance that oil goes rancid, and that will taste (and usually smell) bad. Some though are pretty stable against oxidation = going rancid, and have a surprisingly long shelf life, others not so much.

Smell test & oil test: Just stick your nose over the container and inhale carefully, or rub a pinch between your fingers and smell it – you should be able to tell if they're still good: No aromatic scent = probably sawdust-quality by now. Otherwise if you are not sure, mix a little with a drop of oil and let it sit for a bit: If the oil + spice/herb then tastes properly flavorful, it's still good to use. Most herbs & spices are still fine to use if they've lost a bit of aroma, you might just have to use a little bit more than when they were super-fresh.
If any spices or herbs smell stale, foul, musty or rancid, that's an immediate reason to toss them – same goes if you spot mold or other icky things in the container. If you detect mold: Check how such moisture could get in there in the first place to cause that!
Careful with the smell test: Inhale carefully (so as not to irritate your sinuses), and definitely don't exhale into the container – that's how moisture, and at worst pathogens, find their way into your spices & herbs.

Important: NEVER use your spice mill directly over a steaming pot, or also your container of already-powdered herbs & spices: The moisture will get into your spice mill or container, make your herbs or spices lose aroma faster, and at worst cause spoilage – plus, if the mill mechanism is metal, it can corrode from the moisture and spice residue.
Simple method to dose your herbs & spices well, and you might have seen cooks use a lot: Have a little bowl or plate on the side to catch the ground spices from your spice mill(s) and also the other containers of herbs & spices, or pour them into your (clean) hand and then into the pot – and wash your hands afterwards, because spices in your eyes if you rub them is no fun. Your herbs & spices will thank you for it.
For the same reason, DON’T store your herbs & spices, not even the little containers you use regularly, right next to or over your stove: They don’t like the heat, and steam might seep into those little containers even if you think they are all air tight, especially when you grab and open them while steam is around. So keep them away from all sources of steam, moisture, and heat, as the main killers of freshness.

<u>Example how there is no one-fits-all, even depending on the spices involved</u>: I use black pepper a lot, freshly ground as I prefer the taste that way, and those little pepper kernels stay fresh for ages if they're good quality and kept utterly dry, dark, and in an airtight container in my herbs & spices box. As they are cheaper in larger packages, I get myself a nice bag of it and am good for many years even with my fairly high use rate. On the other hand caraway, which is amazing for cruciferous veggies and various other meals (less flatulence / bloating, enhances flavor) I

use not that often, and grinding it myself is barely worth the effort, as I've found the ground, good-quality version stays perfectly fine to use for several years if stored properly, so I have my little jar of already-grounded caraway. YMMV.

What I always recommend to have at hand, provided you use them of course, but they are common staples which create a massive variety of possible flavors for your meals:

- **Black Pepper**: Maybe also the one most likely a candidate to have in your pepper mill and extra pepper corns stashed away in your herbs & spices storage box. A good universal spice.
- **Good onion powder**: Fresh onions are amazing if you like them, but you might not always have them at hand – then this powder saves the meal. Plus, for some types of meals the powdered version might be actually better, like mixing it into a sauce, a bit of fresh cheese or such. Be extra attentive for quality here: Good onion powder stays good in its airtight, dark & dry storage container for several years, while bad quality might taste like sawdust within months, if not right away.
- **Good garlic powder**: Same as with onions, fresh garlic of course is amazing, but for the same reasons having good-quality powdered garlic can be handy to have or even better in some cases. **Fresh garlic** as whole bulbs can be stored dry, dark and well aired for a couple of weeks to a few months (single cloves in its peel for a few weeks), or frozen (see under Fridge & Freezer) for many months to years.
- **Curry powder**: If you like the taste, it comes in many varieties and can make all kinds of meals almost instantaneously flavorful. Keep in mind that curry powder even faster than many other herbs & spices can turn bitter if overheated or “burned” (like if you toss it into oil and heat it with no other ingredients around it), or if you use cooking utensils made from reactive materials like aluminum or copper, or scratched utensils.
- **“Italian” herbs**: Dried **basil**, **oregano**, **marjoram** for your pizza and tomato sauce, but also e.g. **rosemary** and **thyme** are not just for Italian cuisine. They are great with potatoes and many other recipes (don’t use too much of either!). I generally recommend the powdered versions of rosemary and thyme, as the flavor unfolds better – get yourself a mortar & pestle, or stick with the already powdered versions. Be aware that all of these do not like high heat / burning either, and can taste bad if overheated or burned.
- **Paprika powder**: Same as curry powder: Can very quickly turn many dishes more flavorful, but also can more easily get “burned” or overheated and then turn bitter. There are a variety of flavors, from spicy to mild, or even smoked.
- **Caraway**: If you like making cauliflower, broccoli, cabbage and the like, a tiny hint of ground caraway will enhance the flavor, make the veggies easier to digest, and lead to less flatulence / bloating (works also with legumes). My rule of thumb, unless of course you like the taste of caraway: If you can taste the caraway, you used too much, if you get flatulence after eating those veggies, you used not enough ;^)
- **Mustard**: If you like the taste, a bit of mustard powder can be a great source of flavor. You can also make your own mayo replacement with it (without eggs) – you can find recipes for that online.

- **Lovage (aka love parsley)**: What's not to love: Very flavorful and savory, a staple in many veggie broth mixtures, and also otherwise to enhance the savory flavor of many types of meals.
- Other candidates depending on how much you cook yourself and like the taste are things like **Parsley, Tarragon, Ramson (wild garlic), Chives** and whatever else you personally love of course, be it **Cayenne Pepper** if you favor it a bit more spicy, **Ginger**, **Turmeric**, the list is endless depending on personal taste and style.

Some herbs & spices also have **medical qualities** and can double as part of your “household pharmacy”, like **Anis Seed** as part of a tea against coughs, or for a whole range of medical properties e.g. **Ginger**, **Turmeric**, **Nutmeg**, **Cumin**, **Cloves**, **Coriander**, **Cardamom** or **Cinnamon**, just as herbs like **Mint**, **Dill**, **Sage**, **Thyme**, or several of the other herbs & spices already listed above, and many more. Please read up yourself on their uses but also caveats and contraindications if you want to use them that way.

With about 6-15 spices & herbs you can already create a good foundation though to flavor most meals very well and with good variety.

Seasoning & Flavoring #2

Bouillon cubes / powder are an amazing source of flavoring, not just for soups. Many sauces, pastes and other recipes benefit from them, or even just tossed into your bowl of rice and legumes, or various sauces and your meal becomes more flavorful. Keep in mind that if you use them as a flavoring ingredient you are automatically adding a good chunk of salt, so adding extra salt to your meal is usually too much. Your personal taste might lean more toward chicken or vegetable bouillon cubes / powdered stock, or you can stock some of both. In my experience, vegetable stock is more universal as a flavoring for a wide variety of recipes.

Keep in mind that any bouillon cubes or powder which also contain fat have a lower shelf life than without. Even with fat added the high sodium content gives them usually a shelf life long beyond their best-before date, and a small smell- and taste-test can tell you if the fat in it has gotten rancid. Those without fat added have an incredibly long shelf life (many years to a decade or more) if kept dark, dry and airtight, and usually can’t go “bad”, they just slowly lose aroma over time.

Another issue with stock / bouillon powder with fat added to them can be “stickiness”: Especially with powder over time, and all the more if the container was opened often and more moisture got into it, you can end up with a sticky, hardened mass that is still fine (if not rancid) to use but it's a bit of a struggle to break this mass apart.

Personally I always only get powdered veggie stock with no fat added, that way I skirt these problems and have something for many types of quick and easy flavoring, with a shelf life easily surpassing any time horizons of using them up.

Side note on MSG and bouillon: Many people question the health concerns regarding MSG as a flavor enhancer / source of umami (savory taste), while some people are sensitive to it and should definitely stay away from it. If you're fine with MSG or other food additives in your bouillon powder or cubes, by all means stick with it. Be aware, though, that MSG and yeast extract are often needlessly added to bouillon by producers looking to skimp on good-quality ingredients – the kind that actually provide some nutritional value or even mild health benefits, beyond just lots of salt. There are types of high quality with MSG or yeast, but by default it's a bit suspicious for manufacturers to use such, as there are plenty of ingredients in a good bouillon that make MSG or yeast superfluous. If you like the yeast-y umami taste, you can always add a bit of nutritional yeast flakes or yeast paste instead to whatever recipe you are also flavoring with your bouillon. A good, flavorful bouillon does not need MSG to taste really good.

Mustard (paste)**, Ketchup & Mayo** or **Ranch Dressing etc.** are common further “seasonings”. In unopened, sealed containers, all three have a shelf life well beyond their best-before date, even unrefrigerated. Especially mustard (paste), be it spicy or sweet, can stay good for an incredibly long time if not contaminated.
If you like those and get them in glass jars (handy to reuse elsewhere), never stick a spoon or anything else in there that isn't really clean, or you risk fast spoilage. If you get them in tubes, make sure the inside of the lid and the opening of the tube don't come into contact with anything else, for the same reason.Tubes have the benefit that less air can get in contact with the content, and thus oxidation and spoiling chances are further reduced. Glass jar, tube, or plastic squirt bottle – the choice is yours, all have their benefits and drawbacks.
The exact unrefrigerated shelf life of these three condiments in an unopened container can vary a lot, depending on the exact ingredients, with mayo on the lowest end (but potentially still easily 1-2 years depending on the recipe), ketchup in the middle, and mustard the most.
Little trick about Ketchup + Mayo: If you mix a good dose of ketchup and a small bit of Mayo in a pan, and sautee anything in it, like rehydrated texturized plant protein, veggies or canned meat, the ketchup will start caramelizing and changing its flavor, bringing out the savory depth of tomatoes, while the mayo replaces the oil – no added cooking oil needed – and adds extra flavor to make the resulting "marinade-like coating without marinating" all the more satisfying. Depending on how long you do it, this mixture of course also will thicken, and even at low heat usually you end up pretty fast with a soft, sticky coating on whatever you sauteed like that. Don't use too much heat, or it won't taste as good – low and slow is the way to go. It’s an easy quick way to toss a simple, savory meal together.
Of course additional flavorings can be added as you like, like a bit of goulash or curry powder, but remember that both tend to go bitter if you heat them too much without a good matrix – maybe best to add those only toward the end, after removing the pan already from the stove, and letting it cool down while the spices soak in the food.

Soy sauce / Tamari sauce and **Teriyaki** (or Chinese **Hoisin**) are further great sources of flavoring, with a similarly long shelf life to miso, even unrefrigerated as long as the container is sealed. The higher the sodium, the better the shelf life even after opening the bottle, but of course you might want to watch your sodium intake.

Miso is an amazing source of various nutrients, and one of the best – if also quite salty – sources of umami flavoring. For the details of the various types of miso, how long each of them can last long beyond the best-before date, please read up on it yourself, there is plenty of information around on the internet. There are batches of miso that have handily outlasted their makers over many decades, while others can spoil eventually. Unopened containers of Miso can be stored usually with no issue without refrigeration, only after you open the container store your Miso in the fridge for best shelf life. Btw, yes, Miso can also be frozen to prolong its shelf life.
A good hot miso broth alone can be downright food for the soul when the world seems dark and chaotic, or a winter evening is particularly long ;^)

Nutritional yeast flakes are one of those things many people do not know about, but they are pretty amazing: A dense source of protein and some nutrients, and a great source of a somewhat cheese-like “umami” flavoring. Sold as “inactivated yeast” or nutritional yeast, they are sometimes utterly overpriced as a “food supplement”, and then again you can find exactly the same product for much less, especially if bought bulk.
Nutritional yeast is not just good as a seasoning: You can even make your own "fake cheese dip" or cheesy paste and spread from it with just a bit of oil and starch (corn, tapioca, etc.) – and depending on the texture and flavor you're after, some water, milk or milk powder, and additional herbs & spices or other flavoring like a bit of veggie bouillon powder. It sits somewhat in the middle between seasoning, and actual food item.
A bag of 1-2 pounds of these yeast flakes lasts you a long time – and if properly kept airtight, dry, and not too warm, it has a shelf life of 2+ years. It's surprisingly cheap considering how much seasoning, sauces and/or fake cheese you can get out of it. In a proper airtight container you can also freeze it to prolong its shelf life even further. If you like it, simply buy a (mylar) bulk bag cheaper, fill up your everyday jar, and shove the bulk bag into the freezer if you have the space.
If it starts showing suspicious changes in color (could be mold or rot),smells off or unpleasantly pungent instead of the soft, cheesy scent normal for it, that nutritional yeast is not safe for consumption anymore. If it starts forming clumps, most likely too much moisture got in, and it may or may not be still safe to eat: If there are just a few small clumps you can remove, and everything else after thorough examination still looks, smells, and tastes like perfectly normal nutritional yeast, it's most likely still okay to eat. Keep an eye on it though if that happened, as there might be still more moisture in it, leading to mold and rot soon. With good storage practice this should never happen, though.

Instant Gravy is an instant, fast way to make what for many is part of their comfort food, gravy, and doing so without much cooking. Be aware though that many contain a horrendously long list of sometimes questionable food additives, so it is up to you if you are really okay with that, just as what I mentioned under bouillon regarding MSG and yeast extract.
At the core many types of instant gravy contain things you have anyway in your pantry, and thus could easily make your own version of it, with things also commonly found in instant gravy, like white flour and/or starch, bouillon, a bit of oil, ghee, or other fat, some extra flavoring like onion, garlic, or paprika powder, a bit of pepper, a splash of soy sauce, yeast paste or flakes, miso, a drop of honey or caramelized sugar, and maybe a bit of milk powder or condensed milk.

So some people cannot imagine their private pantry without some instant gravy, almost on par with another major staple of many pantries, bouillon cubes / powder, while others consider it a needlessly expensive food item, usually loaded with way too many additives, given that you can make your own on the fly with the above ingredients quite easily. Where you sit on this spectrum is up to you.

These handful of options are just those most widely available and widely liked by those who try or know them, and with great versatility for many recipes and meals. Even plain bread with a bit of ghee, mayo, or ketchup, a sprinkling of yeast flakes, and maybe a bit of extra flavoring from spices or bouillon powder can suddenly taste not bland but genuinely interesting.

There are of course many other condiments and additional sources of flavoring you might know and love and thus add to your pantry, especially if they have a long shelf life, from spicy things like **sriracha sauce**, **tabasco sauce**, **chipotle**, **wasabi paste**, to savory ones like the famous british **marmite** or similar types of **yeast pastes** made from yeast extract, to the wide variety of **barbecue sauces**, or **fish sauces** which can also work surprisingly well as flavoring for other types of recipes, or in a variety of recipes **curry pastes**, or a variety of **chutneys** (which also have a long shelf life in their small glass jars as long as they remain unopened, and you can even make them yourself if wanted, including then canned in jars).
As long as your preferred condiments and flavoring agents have a long shelf life and usually long beyond the “best before” date, they are an excellent addition to your pantry, and since you usually do not need a lot of them per serving they last you a long time. Bought in bulk when cheap and stashed away, they can save you money and help build your pantry further.

Honey & Sugar

Honey is one of the oldest flavorings in the world, and contrary to **white sugar** also contains some micro-nutrients. Both have a practically unlimited shelf life if kept dry, cool, and free of moisture or water (which can cause fermentation!), pollutants, or pests – so never stick anything that isn't clean and dry into your jar of honey or sugar. Honey found in ancient Egyptian tombs could technically still be consumed if properly de-crystallized, according to analysis! If your honey crystallizes, slowly warm it in its container in a warm – not hot – water bath, and it turns back into its normal, liquid state.

A bit of honey or caramelized sugar can make your tomato sauce much more flavorful – if you can actually taste the sweetness, you used too much. Honey in particular can work amazingly well in many other sauces and recipes to enhance the flavor without turning it into the sweet direction. Of course both are also extremely calorie-dense per gram or ounce, for good or ill.

Another useful application of really clean honey or sugar: It can help with **wound healing**! If you want to know more details about that, please read up on how to use it, but the effects can be pretty amazing for wounds that are not healing well, and sometimes even help when antibiotics are failing.

Of course “use at your own risk” and so forth, please inform yourself before you wildly experiment with it for wound dressing or wound healing, just as if you want to learn about the medical details of how and why and when this works so well, good enough to even be recommended by doctors who know about it.

There are even more surprising uses for Honey and Sugar you can read up on, the list is long, and the following by far not exhaustive, like:

- **Food preservation**: Not just jam owes most of its long shelf life to sugar + the canning process, also other types of food can last longer if correctly preserved with sugar. I won’t get into all the details here (nor is it my jam, pun fully intended), so if you want to learn about that, read up on it as there is plenty of information online about it.
- **Grass Stains**: Mix a thick paste of warm water and sugar. Apply on those grass stains on clothes. Let it sit for about an hour, then rinse, and wash as usual. Supposedly enzymatic activity can help break down the chlorophyll in the grass stain. YMMV.
- **De-greasing**: Sounds paradoxical, but if you get icky grease on your hands after working in the garden, garage or kitchen that won’t get clean with just soap, try mixing a bit of olive oil and sugar and rubbing it onto your hands (or whatever you need to de-grease). After that rinse with water and as needed with soap. You might have your solution, pun intended.
- **Body Scrub / Lip Balm**: Mix some sugar with some liquid coconut oil or olive oil – other oils work, too, most are just not as great for your skin, though for some skin types sunflower oil works well too, due to its high vitamin E content. There you are, a DIY body scrub to exfoliate and moisturize – the enhanced Roman way. Since you don't have an ancient Roman scraper, just give your skin a bit of time as you gently massage the oil in, then wash with gentle soap or shower gel. Btw, this also works well on chapped lips, minus the massaging.
- **Flame extinguisher for spicy food**: any know that drinking milk, lassi, or ayran can help if your mouth feels a bit too scorched by spicy food. Instead, you can try a pinch of sugar, a drop of honey, or in theory some hard, sugary candy, and keep it a bit in your mouth. That tends to alleviate the discomfort. It also works to a degree when you scorch your tongue on food that's literally a bit too hot to eat.
- **Fresh flower preserver**: If you like fresh-cut flowers, add a bit of sugar and vinegar (3:2 teaspoons) to the water you keep them in, they tend to last longer. Remember to trim the stems, as the plant will feed through living stems. The vinegar inhibits bacteria growth, the sugar helps feed them – or so I've heard; I've never tried it myself, as I don't keep cut flowers.
- **Cheese preservation**: Not as good as salt, but if you place a sugar cube in an airtight container with cut cheese. It may help reduce mold, as the sugar absorbs excess moisture.
- **Cleaning grinders**: If you have hand-held grinders like for coffee or spices, and need to clean their mechanism, pour a bit of sugar into it and grind it through. Dump the powder and clean the grinder with a clean, slightly damp towel. Ensure the mechanism dries quickly if it is non-stainless steel, so it won’t catch rust. The first bit of coffee / spices might still have a tiny bit of sugar in it, after that you got it completely cleaned out.

Other Sweeteners

The list of alternative sweeteners besides honey and sugar is so long I won't get into them here – if you know them, love them, and they have a good shelf life, add them to your pantry. Be aware though that many artificial sweeteners have been suspected or even proven to be at least questionable for your health, and I won't go into the politics of why they might still be on the market. Other sweeteners which are not zero-calories are functionally often just also high caloric alternatives to sugar & honey, with just different types of sugar sometimes involved (like fructose instead of sucrose) and maybe some additional nutrients, like maple syrup or agave syrup. I will not get into fights with any Canadian here whether having maple syrup in your pantry is a must-have or not ;^)

I want to add here though the one non-sugar sweetener I personally consider the best option of all, as it has no real health concerns attached if consumed in normal amounts: **Stevia**.
In case you do not know this sweetener yet: Stevia is a white powder extracted from a South American plant, Stevia rebaudiana, and in its home region has been used for sweetening for a long time.
The extract is incredibly sweet, depending on the exact amount of stevioside in it and how it was made between roughly 150 to 300 times as sweet as sugar. So don't be surprised or confused by the seemingly high price per ounce, because a small pinch of stevia is usually all you need for your recipe, and I know people who find the sweetness so intense they'd rather just dip the tip of a toothpick into a stevia container and stir it into their coffee or tea, because anything else would be too sweet.
If you have no experience with stevia yet and would like to try it, it might be worth it, but be aware that you really have to be careful with the dosing. If that is a bit too difficult for you with the pure extract, you can always mix a well-measured small (!) amount of stevia powder with a bit of water in a small dispenser bottle, shake it well, and put it in the fridge (it can stay okay at room temperature for a little while, just don't try that for weeks) – boom, you've made your own diluted, easy-to-dose stevia water.
Another thing to keep in mind about Stevia is that at higher doses it starts tasting a bit like licorice, and people who really don't like that taste might detect it and reject even "normal" doses of stevia. For others, who love the taste of licorice and stevia, this is a real boon and they might even favor stevia over other sweeteners for exactly this reason, besides health concerns of course.

If you calculate the price of good stevia, divided by 300, you realize that it becomes far more relative to sugar, while having none of sugar's potential health concerns and sheer calories. This does not mean stevia can replace sugar completely: It offers none of the additional household uses sugar has, nor can it fully replace specific properties of sugar for some recipes which require it for texturizing, caramelizing , browning etc.; in many recipes at least part of the sugar can be replaced by stevia though, if you want to. There are by now even recipes online which tell you how much, or you have to experiment a bit.

Stevia even has shown in studies some slight potential of prevention of caries rather than cause

it like sugar (there are even toothpastes made with it), and of helping to regulate the blood sugar – opinions on those studies are still divided, and of course the sugar industry hates that ;^)
There are also some indicators that stevia might negatively impact the gut microbiome long term, but these studies involved feeding mice (who have a different gut biome than humans) such outrageous amounts of stevia for a very long time that no human would usually be able to eat so much extremely sweetened food, and certainly not that long. So these studies were for really good reasons questioned in their validity to gauge stevia in that regard for humans.

Salt

I list salt not under herbs & spices for good reason. Salt, stored dry and free from contamination, basically has unlimited shelf life. Everyone in the industrialized world has heard “we all eat too much salt”, and for many that is true, since processed ready-to-eat food tends to contain way too much salt, nevermind all the snacks loaded with salt many people consume. At the same time your body needs salt, that is non-negotiable, too little salt intake can be just as problematic as too much.
Note that only 100% pure salt truly can't go bad. So if you want to put some in your pantry, don't use iodized salt or any kind of "enhanced" salt (for your iodine intake, just get a supplement if you don't eat enough fish or algae). Simply add a few grains of rice if you're concerned about clumping from moisture – that usually does the trick, including in your salt shaker.

Furthermore, salt is more than just flavoring: It is one of the oldest ways to preserve food – inform yourself if you are interested in how to do it with what kind of food. There are also simple household tricks for short-term keeping things fresh a bit longer, like if your fridge fails, you can wrap your hard cheese (gouda, cheddar, etc.) in a cloth soaked – but not dripping – in salt water, and it will stay fresh a little while longer.

But wait there’s more! It can also be used for many other things, with the following list far from exhaustive, just to give you some starting points:

- **Remove stains on fabrics** (clothing, carpet, whatever) by pouring liberal amounts of salt on it, let the salt soak up the liquid, and after a couple of hours vacuum or brush the salt off. Baking soda is another candidate for this, depending on the type of stain you are dealing with (see there).
- **Remove stains** like from coffee or tea with coarse salt from ceramic, steel and glass via a bit of soaking and scrubbing. Also surprisingly effective on stubborn stains in your kitchen sink, mixed with a bit of lemon juice or vinegar. Personally I just use denture cleaner tabs for that, though (see “Consumables & Household items” below).
- **Clean copper or brass** with a paste of salt, flour and vinegar, as an old household method. Or use a bit of aluminum foil + salt in hot water to **clean silver**. Do not use these methods if the item has decorations or gemstones that could get damaged by the chemical processes involved! Read up on it if you want to know the details.
- **Remove icky scents from your shoes**: Just sprinkle a few grams of salt into them and leave overnight, pour out next morning, and they will most likely smell fresher.

- Similarly, a tiny bit of vinegar and salt can **remove strong scents from your hands** after handling fish, onions, or garlic. Just rub the mixture over them, then rinse with clean water (a bit of lemon juice also works well). This also works well **on cutting boards** to remove lingering odors.
- **Cooling things down a bit better**: You might have seen things like wine coolers, containers of icy water to chill bottles of beverages. Add a few spoons of salt and the cooling effect is enhanced – if you want to know the physics behind it, plenty of info is available online.
- **Detergent for dish(washer)s**: In a pinch, a bit of salt and baking soda is a cheap, simple way to clean your dishes without modern detergents – and yes, also in most dishwashers!
- There are a variety of **cosmetic uses** for salt if mixed with other things, if you are interested you can read up on that online, some are also mentioned elsewhere here in the document.
- **Soaking your shower curtain** in salt water slows down mold development. No miracle against it, but helpful after you cleaned them.
- **Gargling salt water for a sore throat**, or **steam inhalation of salt water** during a head cold are old household helpers against the symptoms. Swishing a bit of salt water around in your mouth can also help inflamed gums, thanks to its mild disinfecting and anti-inflammatory effect. This won't fix serious underlying causes that need proper treatment, but it can be helpful until you get treatment. There are further uses like salt scrubs, as a replacement for toothpaste, and so on; if you want to know more about medical uses of salt please read up yourself, and be aware these are usually not "cures" and easy replacement for seeing a doctor when you need to.
- Btw, **soaking your toothbrush in salt water** or salt-and-vinegar water overnight can give it a second or even third life, as long as it isn't mechanically worn out.
- **Ant repellant**: Salt can be a barrier against not just demons but also ants. No relation between the two, says the ant queen. ;^)
- … and many more uses. Salt is pretty amazing stuff! Read up on it, and you might be amazed of the many uses one can find for it, far from seasoning and preserving food.

Vinegar

Vinegar again is more than just something to flavor your food with, or for pickling and thus making it stay good longer as one of the oldest ways of food preservation. I mentioned it already a few times above for various uses e.g. with salt, and how it can help with cleaning various things. This list is by far not exhaustive – you can find even more use cases online. Vinegar, and the even stronger (25%+) vinegar essence, is all at once medicinal, nutritional, preservative, pest control, cleaning agent, and so much more! There are several dozen possible use cases, plus tons of traditional recipes and methods to use it!

- It does not replace proper water treatment with filtration and boiling and/or according food-grade **water disinfectant**, but if you have nothing else at hand, a good splash of vinegar added to your drinking water creates "posca", a beverage that hydrates you well

and can at least a bit reduce some bacteria and other biological contaminants (but by far not all!). Combined with simple water filtration methods (some can even be DIY – look them up) and/or water disinfection via boiling or sunlight (look up "solar water disinfection" if you want to know how to do that with clear water bottles), it's not perfect but better than nothing in a pinch (= water crisis, may you never experience it).

- Vinegar is amazing for **removing limescale**. Pour some in (diluted with water if using vinegar essence) into your electric kettle or your pot, let it soak on those limescale stains in your bathroom or kitchen sink, and you will be surprised how they vanish. A thoroughly cleaned, reused old spray bottle for your water-vinegar mix can be an easy way to apply it. Your faucets or shower head, soaked overnight in a bowl or bucket of vinegar-water mix or pure vinegar, can come out squeaky clean from limescale and much more. Since it is not toxic, vinegar is especially good to use for things that later come in contact with food, even though of course you should rinse them properly after cleaning, simply for taste reasons.
    - Be careful though with gaskets, seals and such made from plastics and other potentially acid-sensitive materials, as especially vinegar essence can affect the material. If in doubt, don't use it for them or only sufficiently diluted.
    - IMPORTANT: Never use vinegar on marble or limestone – it will etch into it and leave permanent marks.
- It can help to **remove rust** and other types of corrosion. If you are not sure, test first in a small spot to see how it works. For details depending on the metal read up yourself the various ways to use it. For **cleaning silver** you can also try a mix of baking soda and vinegar, letting it sit for 2–3 hours (not if the silver is heavily tarnished or has ornaments or gemstones that could get damaged by the mix!)
- Mixed with water also works surprisingly well to **clean glass**, even your **windows**.
- Some types of **stains from ball pens** and other pens can be removed from fabric or wood by soaking them briefly in vinegar. Use at your own risk though, as vinegar can interact with coatings, some types of fabric, and similar materials (while historically it was used to help remove the grey buildup that accumulates on fabrics during washing).
- If you got **burned-in residue in your pots** and pans that won't come off easily with scrubbing, try soaking it or briefly boiling it with a water-vinegar mix. Many such stains come off easily after that.
- It is **antimicrobial**, so also good as a **household disinfectant-detergent** (unless things are too greasy), from cleaning out your fridge to your counter after doing things that might have contaminated it. It's not sterile on clinical levels, but before modern disinfectants existed, water-vinegar mixtures were used to clean wounds and surfaces – the best people had at the time. Even modern studies have proven that vinegar, properly used, can take care of most problematic microbes (including mold) encountered in households perfectly fine. It's also great for preparing jars before canning: Boil the jars and twist-off lids or rubber rings with a bit of vinegar added to the water – it enhances the pasteurizing and sterilizing effect.
- It can help to **remove odors**, while its own distinct scent tends to evaporate fairly quickly if left open to the air. Mix with a bit of salt to clean your cutting board or your hands after handling fish, and you remove the odors, then rinse them with clean water. A small bowl

of vinegar, left open overnight in a fridge that somehow still smells bad even after cleaning (including with a bit of vinegar mixed into the water or soap), will take care of many types of odors – and once you remove it, the vinegar scent soon dissipates (another good trick: leave spent coffee grounds in an open bowl in your fridge for a while)

- Vinegar is good for **cleaning produce** (fruits and veggies) if you're not entirely sure water alone would be enough. Or try first some baking soda, then vinegar.
- If you do not have some **drain cleaner**, or want to try something different, first pour half a cup of baking soda (bicarbonate of soda) down the drain, then half a cup of vinegar. Let it soak down there, and after 10-15 minutes pour a liberal amount of hot water (like hottest from the faucet) into the drain. If it is mostly a grease problem, just use baking soda & warm water, if mostly limescale, vinegar. The above is mostly mechanical fizzing action plus a little degreasing or limescale removal – though note they do partially neutralize each other.
  A good amount of baking soda and then a healthy slosh of vinegar into your **toilet**, spread around with the toilet brush, can bubble and fizz away a lot of ick – then pour a few liters or a gallon of hot water in, and you're done. Personally though, I get my toilet (the part under water) squeaky-clean by tossing a tablet of dirt-cheap denture cleanser into it overnight ;^)
- For some people vinegar (maybe diluted if you have sensitive skin, and don't use pure vinegar essence for this!) helps to **ease the itching from insect bites** & stings.
- Trouble with **fruit flies**? Take a glass of vinegar with a few drops of dish soap, cover it with a bit of plastic wrap held in place by a rubber band, and poke holes large enough for the fruit flies to get through. They get attracted by the scent, usually won't find their way out again, and drown in the liquid eventually.
- **Ants** seem to not like the scent of vinegar, so it can be a barrier against them, just like salt. Since it evaporates eventually, it needs to be reapplied.

WARNING: Vinegar can cause problematic or even dangerous chemical reactions with certain chemicals. Never mix vinegar with:

- **Bleach**, which can create toxic chlorine gas,
- **Ammonia**, which can create chloramine vapors and a host of potential health problems,
- **Hydrogen peroxide**, which can create highly corrosive peracetic acid,
- Or in a closed container **baking soda** in a closed container, as the released gases can burst it (though vinegar is a great way to test if your baking soda is still active, or has mostly turned into washing soda by now. See below about "Baking Soda" for more),

Note that **apple cider vinegar** has been found to have various moderately positive nutritional and health effects, too, and can also be used to easily make a flavorful Posca, – its fresh taste and rehydrating effect (a pinch of salt optional) make it especially great on hot days or after sweating a lot.

If you want to use vinegar for cleaning and antimicrobial purposes, I always recommend getting dirt-cheap **vinegar essence**, like 25%+. Uncontaminated it basically cannot spoil due to the

high acidity (unopened good for decades and more), so you can buy a few bottles when on sale and be set for a long time. If you run out of your proper cooking vinegar, you can always use a strongly diluted splash of vinegar essence with plenty of water as a replacement. And for cleaning purposes and such, it is so strong that you can dilute it down to 5% or less and still get more bang for your buck than buying bottles of normal vinegar.

If you notice some cloudy bits on the bottom of your vinegar bottle, don't worry, this is just a bit of harmless **mother of vinegar**, a sign of the reactions creating vinegar in the first place still happening in the bottle. In the past, mother of vinegar was even used to make more vinegar. Simply don't consume the cloudy bit at the bottom if you're concerned about it, but it's perfectly harmless if you do.

Baking Soda

Baking soda aka Sodium Bicarbonate is not just needed for baking, from delicious soda bread to cakes & cookies. That's of course the main reason to have it in your pantry, but there are far more household uses (see below).

Note that "baking powder" usually contains three things: baking soda, an acid like potassium bitartrate aka cream of tartar, and a separating agent like starch. As long as this mixed powder is kept dry the ingredients do not (much) react, but once they get in contact with moisture, the baking soda and cream of tartar react with each other, and act as the leavening agent baking powder is known for.

If you prefer the easy, ready-to-use mixed baking powder, there's no reason not to keep a supply of it for your baking needs. Alternatively and if you don't mind the extra step, and understand how it works, any sufficiently acidic and moist environment will trigger this chemical reaction with baking soda. Even if you prefer using baking powder for your normal baking, having a package of baking soda at hand can be handy for the many other uses (see below), and it can serve as a replacement for baking powder in a pinch, as long as you understand how it works.

For your baking needs you can mix baking soda with a tiny bit of vinegar, or a bit of acidic fermented dairy like yoghurt or sour cream (those two tend to be especially good) – even the acidity of tomatoes might do the trick, to give you some ideas. You can also buy cream of tartar as it has some additional uses besides being the acidic partner for your baking soda (I mention it under "Other Baking / Cooking ingredients").
Roughly half an ounce or 15g of baking powder usually contains around ⅓ baking soda (4–5g), ⅓ cream of tartar, and the rest is starch and other substances .
As a rule of thumb: 1 part baking soda replaces 3 parts baking powder in recipes, then add a bit of an acidic ingredient, and you're done.

If you use vinegar, usually roughly 1 part baking soda + 2-3 parts vinegar are good, depending a bit on the acidity of the vinegar (typically 5%). 1 level teaspoon of baking soda is usually around 4–5g (heaped more like 6–8g), so you can mix it with 3 teaspoons (or 1 tablespoon; 15–45ml) of

vinegar, give or take.
If you use lemon juice, it's more like 1 teaspoon of baking soda + 1.5-2 tablespoons of lemon juice, depending on the acidity of the lemon. With yoghurt or buttermilk and similar acidic dairy products, you will probably need 300-500g of the latter for 5g baking soda to replace a typical sachet of ½ ounce / 15g baking powder.
If you use too little baking soda, the dough won't get fluffy enough, and at worst it will taste a bit bitter. If you use too much baking soda, it will taste soapy.

For more details, read up on it elsewhere, as it gets too much into the art of baking for the purpose of this document. There's a lot more interesting things to learn if you are interested and not yet into baking like that. More important than perfect measuring is a good understanding of your dough, and not perfect mutual neutralization between the baking soda and the acidic addition, but a controlled creation of CO2 and usually a slightly remaining acidic dough in the end. Depending on what your other ingredients are, you might need a bit less or more of everything. This is what those who bake with baking soda get a good understanding and feeling for. If you don't want to do / get that, stick with baking powder and hope you never run out of it ;^)

Store it dry, dark and in an airtight container for best shelf life (yes, you are by now probably sick and tired of me writing "dry, dark and in an airtight container", but at least I didn't have to say "cool" here ;^). If you want to slow the aging of your baking soda down, you can toss a food-grade moisture absorber packet or some rice on top of it – those will bind some of the moisture which might get into your otherwise airtight container.
It's perfectly fine to store at room temperature, just keep it away from heat (if you live in a hot climate, find a cooler spot to store it). Only use really bone-dry spoons when removing some from the airtight container, as any moisture that gets in contact with your baking soda and air will speed up its aging until it's useless for baking.
When I say "best shelf life" and pure Sodium Bicarbonate, we are talking about a substance that can potentially outlast you under best conditions, although in reality for most people most opened containers or packages of baking soda stay good for about 2-3 years, after that expect diminishing effectiveness.
Technically sodium bicarbonate can only get bad two ways:

1. Moisture + Air (CO2) + trace acids in the air can react with the sodium bicarbonate, and change it into something else, one grain at a time. The reaction with acidity releases CO2 from Sodium Bicarbonate (NaHCO3), which causes the leavening effect you also get when baking with it.
   So moisture and acidity can turn your sodium bicarbonate into something chemically different over time: washing soda (more on that below). That's why "air tight, avoid moisture" are the key factors. Put a moisture absorber packet in that airtight container, don't leave it open longer than needed, and you've got that covered to keep your baking soda well and good for a long time.
   If you want to test if your baking soda is still good in this regard for baking, there is a simple method, the **vinegar test**: Take a little of your baking soda and drop a bit of vinegar or lemon juice onto it. If it fizzes or even bubbles nicely in contact with the acidic

liquid, you still have good baking soda. If little to no reaction happens, that baking soda ain't proper baking soda anymore, it is already turning into washing soda (I talk briefly about that at the bottom). Additionally, good baking soda should smell like nearly nothing, while if it already reacted too much with air, moisture and acidity, it can smell and taste slightly soapy, alkaline, or "stale" – a sign it has turned into sodium carbonate: useless as baking soda, but useful as washing soda.

2. If contaminants get into it, or it is mixed with other substances as done when sold as “baking powder”, like with starch, those extra ingredients in your package of baking powder can and do eventually go bad – at worst getting moldy or rotting if enough moisture and microbial contamination occurs. So if you want something with maximum shelf life, get only 100% pure sodium bicarbonate as your baking soda – that way it has the best shelf life and is more useful for other purposes.

I highly recommend you read up on what Sodium Bicarbonate actually is and its chemistry, so you can use and store it with real understanding. The chemistry behind it is pretty interesting.

The list of uses for (especially pure) baking soda is also very long and worth reading up on, so the following list is again far from exhaustive. Please consult multiple sources if you are not sure on some uses of baking soda, and be aware that some materials react poorly to it, and that frequent application can have negative effects – from your teeth (if used as a toothpaste replacement) to surface quality.

- **Odor removal**: Place a bowl of baking soda in your fridge and let it stay there to neutralize unpleasant odors. Sprinkle a bit onto your stale-smelling clothes or carpet, or into your smelly shoes, let it sit for a few hours, then shake it out – or, for carpet, vacuum it. Many icky scents will be gone after that. It also works on kitchen utensils with stubborn odors: soak them for a few minutes to a couple of hours in water with a bit of baking soda, and most odors will be gone (vinegar can also work that way, see above).
- **Cleaning agent**: Mix baking soda with water into a paste to clean your kitchen counter, tables, dishes or many other surfaces, as it acts as a mild detergent and at the same time as a mild abrasive (it also works to clean metals like copper, brass, or silver, or even light rust from iron or steel, via gentle polishing). If in doubt, make sure in a small, hidden spot that the surface you use it on will be fine chemically to be exposed to baking soda, or you might regret it.
  Mixed with vinegar – causing it to fizz – it can have even stronger mechanical cleaning power but less direct degreasing effect. It can damage sensitive surfaces, though, and of course keep in mind general rules about use of vinegar. (Again, read up on details if needed.)
- **Stain remover for fabrics**: Sprinkle a bit of baking soda on fresh stains on fabric, and let the powder absorb whatever is staining it. Then wash as you normally would. (Salt is another option for this, depending on the stain one or the other can work better).
- **Stain removal in the kitchen**: If your stove or pots and pans have baked-on stains, pour some baking soda into them, add some water, and let it soak for a while. After that, clean with water and soap – the stains should come right off. (For pots & pans boiling some vinegar-water mix can also help, depending on the type of stains.) I never tried the

following as I do not own microwaves, but allegedly a bowl of water with a bit of baking soda, heated for a few minutes, also helps loosen residue and neutralize odors in microwaves via the steam.

- **Clean veggies & fruits**: Mix water and a bit of baking soda, and let your veggies or fruits soak for a while in a bowl of that, or scrub them with it. Then rinse thoroughly. The baking soda helps to remove residues which water alone can't do, while it's perfectly safe, and once rinsed off won't leave any icky aftertaste like other detergents might.
- **Laundry & Dishwasher**: Half a cup of baking soda added to your laundry in your washing machine or into your dishwasher can make your laundry smell more fresh, combat bad odors in the appliance, and can have a mild detergent effect of its own, or enhance whatever detergent you're already using.
- **Drain cleaner**: Explained under vinegar above, see there how to remove icky smells and to a degree also residue clogging your drain. If your issue is mostly just grease and not also "caked" stuff, baking soda or washing soda with a cup or so of warm water, left to do its work overnight, is usually enough.
- **Balance bitterness or acidity**: If food tastes too sour (like oops, vinegar accident) or too bitter, try adding a pinch of baking soda – it may reduce the bitterness or acidity. Be careful, too much and your food might start tasting soapy, so really just use a tiny pinch, and if needed work your way up slowly after thoroughly stirring.
- **Egg peeling**: If you are frustrated about eggs not peeling cleanly, add a teaspoon of baking soda to the water you cook your eggs in. Afterward the eggs probably will peel easier.
- **DIY Soap**: Baking soda mixed with oil or fat are the key ingredients to make your own detergent and even soap. For the details please read up on it so you really understand the process and don't end up with a mess.
- **Toothpaste**: Simply mix baking soda with water into a paste, and you can use it in a pinch as toothpaste. Don't do that too often though, as the abrasive effect could long term damage your teeth.
- **Cosmetic uses**: Mix baking soda with water to create a gentle peeling paste to gently massage onto your skin as a peeling wash. Simply rinse with water afterward like you would with any peeling soap. In your **hot bath** a bit of baking soda mixed with salt and whatever essential oils you might like (not too much, some can become irritants!) can relax your skin. As a **foot bath** you can add half a cup of baking soda to a large bowl with warm water and let your feet soak in it for a while, it can help relax them and at the same time neutralize any potential odors. Don't do any of this too often though, as frequent use can mess with the natural balance of your skin.
- **Insect repellant**: Ants are repelled by baking soda (not baking powder, they love the starch!), so you can use it (just like Salt or Vinegar) as an ant repellant, replace from time to time until you fix your ant infestation as needed. A bowl of water and baking soda can also repel some other types of insects that don't like the scent. If you mix baking soda with sugar and place it on the ground, you get yourself a cockroach killer if you are battling such an infestation: The cockroaches are attracted to the sugar, eat it, and the baking soda mixed in kills them.

- **Plant care**: Spray a mix of water and baking soda onto your plants to combat some types of fungal infections, reduce rot, and deter some pests. There are probably even more specific gardening uses, but I'm not enough of a gardening fiend to know those. Read up on the details yourself, and what plants might be damaged by baking soda!
- **Medical uses**: Half a teaspoon of baking soda in a glass of water can help with reflux, as it neutralizes the stomach acid. Similarly, mixed with honey it can work as a natural way to ease coughs (don't expect miracles, but it helps some) – personally though I prefer a tea infusion with a bit of anise seed. Again, please for any medical uses as needed read up on details yourself, especially if you got some more serious conditions going on or there are any contraindications.
- **Deodorant**: The principle in theory is simple and mentioned in various online sources: Mix any food-grade oil of your choice (like mildly antimicrobial coconut oil) with a tiny bit of baking soda and apply as a natural deodorant, as the pH of baking soda is much higher than the natural pH of your skin, and thus kills off bacteria as the usual source of odor.
  You can add a bit of diluted essential oil if you would like extra scent. Essential oils like sandalwood, cinnamon, citronella, lemon oil, lemongrass, lime, rosemary, fir, tea tree or lavender all can work well for that purpose. Please take care with essential oils, as some of them if not properly diluted can irritate your skin.
  The reason why I do not recommend doing this: You are messing with the microflora and natural pH of your healthy skin, which long term (with sensitive skin even pretty fast) can cause all kinds of skin irritations, at worst even contact dermatitis. The oil can also clog pores, worsening skin problems further and at worst leading to abscesses. Either way, long term you can easily end up with worse odor from your armpits if you do this.
  So I advise against this one, and it's a perfect example of how not all "household uses" you can find online are actually advisable.

Btw, if your **old baking soda is defunct for baking**, it usually mostly turns, through moisture, warmth, and chemical reaction, into Sodium Carbonate (Na2CO3) commonly known also as "**washing soda**". This isn't useless at all – in fact, it is more alkaline!
Such "old soda" turned mostly into washing soda can actually be better at removing oil, fat, and other grease (as the name suggests), but also more irritating for skin and eyes, so use it more carefully if you want to use it as a detergent. For stains that even baking soda or vinegar give up on, your "old baking soda turned washing soda" can be your savior, serving as a very strong detergent for laundry, dishes, and other cleaning purposes. It also binds many odors even stronger than baking soda, and can work even better to clean your drains of greasy residue. Be careful with dosing it though, as it is really quite strong.
Please read up some more yourself if you want to use your "old baking soda turned washing soda", or in general get and want to use washing soda. There are good use cases for it, but also some things to be careful about, for example, don't use it on aluminum as it can damage the surface, and it is certainly far more aggressively alkaline than baking soda.
Baking soda that has mostly turned into washing soda is absolutely not something you want to use for food purposes though! Ick ick ick bad taste and at worst upset tummy!

Other Baking / Cooking ingredients

The list of other ingredients for baking and cooking you might like to use is long, and the various parts of the world, sometimes even individual regions, have so many special types that I could not even begin to scratch the surface here .

Typical examples that are fairly widely known include **Agar Agar** and / or **Gelatin** to make various desserts including puddings, jello etc., while **Linseeds** and **Chia seeds**(already mentioned earlier) can help create gel-like textures, useful for binding and texturizing, plus Linseeds can actually serve as a vegan replacement for eggs in some recipes (how to do that you can read up elsewhere if interested).

Citric Acid and **Cream of Tartar** can be relevant for achieving desired / needed acidity or sour taste, are important for whipping egg whites (fresh eggs or frozen egg white work), and especially Cream of Tartar is the common “reaction partner” with baking soda in ready-made baking powder for baking or cooking. I talk about this under “Baking Soda” above.
If you want the “foolproof” quality of ready-mixed baking powder, you can even go for all three of course: baking powder, baking soda, and cream of tartar in your pantry. The baking soda can then also be easily used alone in doughs that do not call for baking powder / cream of tartar, like some breads which use yoghurt or other dairy products as part of the recipe.
For those interested in the art and science of baking (I am not really): Cream of Tartar is also used in baking to influence the crust or fluffiness of baked goods. Furthermore it reduces the crystallization of sugar, and can be used for making syrups or smooth caramel rather than ending up with hard candy, or depending on the recipe in general getting less "grainy" results when making sweets yourself with sugar, cream of tartar, and other ingredients.
Both these acidic ingredients are also pretty good (dissolved in water) to get rid of limescale if you don’t use vinegar, and to get rid of some types of oxidation on metals.

Lecithin is naturally present in egg yolk (also in soy beans), but also available as an extract, and some love it as an emulsifier for some sauces or otherwise even distribution of fats, including to create some types of more stable doughs.

For those who like to prepare meat, **Papaya-Extract** or **Pineapple-Extract** can be amazing to tenderize meat, and slightly alter its flavor.

Shelf-stable Juice / Smoothie

Some consider this superfluous, others a must-have: **Shelf-stable juices**. The reasons for both sides to view it like this are also long, from being a source of comfort or not, a source of additional liquid (in case of disruptions of the water supply), its nutritious value and so forth.
For the most part, both sides have their valid views on this, and thus valid reasons to add it or not to their well-stocked pantry. Let me be very clear here though about the health claims: Most but not all is marketing, and it depends a lot also on what kind of juice.
Here are some generally valid critical points about juice, if you want to consider it as anything

more than a sweet, fruity beverage – at best just a small notch better than soda like cola or Fanta. If it got pasteurized, which is almost always the case:

- Unless it got fortified after the UHT / pasteurization (which might reduce shelf life if then filled and sealed in its container), the vitamin C content is definitely reduced if not entirely gone, so don't rely on shelf-stable orange juice as your source for this critically important vitamin, although some can still have a nice chunk of vitamin C in them – sadly many manufacturers don't tell you how much, and probably for good reason, as it would go against their marketing claims, which they thus keep vague.
- The UHT / pasteurization process also tends to destroy some of the secondary plant substances, like some antioxidants, and some micronutrients. Some polyphenols might survive the process, but that's again hard for anyone to gauge who has not seen an actual, proper lab analysis of the specific juice.
- Juice usually is just that, juice, which means most to all of the dietary fiber and attached substances have been removed. You lose the dietary fiber, but also various other nutrients which might have been in these parts of the fruits or berries. As a result the nutritional value of shelf-stable juice is vastly lower than smoothies, while smoothies usually have a very limited shelf life, or need to be frozen to extend it significantly (albeit slowly degrading in nutritional value even in the freezer).

-> What stays is a lot of sugar (glucose & fructose) which gives you a fast sugar spike if you drink it without enough dietary fiber, resistant starch or other things in your meal consumed together with it, plus usually most or all of whatever minerals the fruit or berry might have had are also still intact and present.
Due to the lack of dietary fiber, juice is also literally not "substantial", it won't help you much to keep hunger at bay for long if at all, while you are consuming a significant amount of (natural) sugar – and many juices have even artificially added sugar, making it functionally close to Fanta and similar sodas, without the carbonation.

If you can find real **shelf-stable smoothies** (not as common as juice, but exist), they definitely have a better nutritional profile than juices. Nonetheless the UHT heating and other processes to make them shelf-stable means also significantly reduced or even no vitamin C content, and destruction of secondary plant substances like many antioxidants / polyphenols.
The higher dietary fiber and other nutrients which tend to survive the heating intact make smoothies still the better choice for nutritional and health reasons, plus it actually can help to keep hunger at bay way better, while the blood sugar spike is less compared to juice (but not very low!).
Many such "smoothies" sold in supermarkets are actually a mixture of smoothie and juice – priced like smoothies, but with only a marginally better nutritional and general health profile than juice.
If you want the best possible nutritional profile from fruit as a beverage, shelf-stable is not a good option, you will have to freeze self-made or good quality store-bought fresh smoothie, which has a refrigerated shelf life of just a few days at most max.

The exact shelf life of shelf-stable juice can vary extremely, depending on the packaging, how the juice was made shelf-stable (usually pasteurization is involved), and also what juice it is –

usually the more acidic, the longer the natural shelf life to begin with. Unopened in its original container at room temperature you can hope for 6-12 months of safe shelf life, and it might or might not be safe after that. If the container is bloated, damaged, or the juice smells or tastes just slightly strange, better get rid of it, as some specific types of microbes might still have managed to survive the process to make the juice shelf-stable (usually UHT heating), or gotten into the packaging – drink that, and the results for your digestion won't be pretty. Of course once opened such juice needs to be consumed fast, or can be kept for usually no more than 1-3 days in the fridge, if very acidic maybe a bit longer.

Water

I could have added this first, because nothing is more important than water. You can survive for weeks without food, but you can make it only 2-3 days without water. Hopefully you'll never experience a water crisis, but if a natural disaster hits, and as long as your pantry is not affected, a supply of drinkable water can make a huge difference between "panic scrambling mode" and "chilling out and waiting for the water infrastructure to come back online", and even a few hours of "water maintenance" are easier to wait out if you have stored water.
Water itself cannot get bad, it has technically infinite shelf life. It’s contaminants which make it “go bad”.

As a rule of thumb, and if you want to also be prepared for “water outages”, keep around 2 liters or a bit more than half a gallon of water as the absolutely bare minimum per day stored away. This is for drinking and to a degree cooking as long as you also use the entire liquid then for your intake – no tossing away of any cooking water.
If you want to have a more comfortable margin, might be sweating more, having some diarrhea, to really have enough for cooking and so forth, calculate at least a gallon / 3-4 liter per person per day, if also for washing, cleaning and additional purposes you can even easily end up with two or three gallons per day or more. Gauge yourself for what makes most sense for you, your situation and your preferences.

Rotating store-bought water: The easiest but not cheapest way to do this is getting yourself a supply of cheap water in PET bottles or tetra paks. The latter have the benefit of automatically storing the water dark, the former can be used for the solar disinfection method (read up on that as a low-resource, low-tech, slow but surprisingly effective emergency water disinfectant method if interested).
You can also mix such tetra packs and PET bottles, and some canisters filled with drinking water some stores sell (usually a gallon per container), while also giving you some canisters you can later refill with water if needed (though it won't stay safe to drink as long if you don't treat it properly).
Keep in mind though what you can easily handle and lift yourself: If you struggle with the water container (like larger canisters), you're going to have a hard time handling those during a water crisis – including in ways you might not yet expect. If you are not sure, make it a habit for a while to handle such larger containers, to see how practical they really are for you, or if you are not better off with just a stockpile of PET bottles and tetra packs. If you are concerned about the extra trash, see if you can get it in bottles with container-deposit, so you can return the bottles

over and over for re-use by the company.
Water stored in such industrially filled drinking water containers, as long as they are not damaged and remain unopened, basically cannot easily go bad, it stays good for many years, pretty much for as long as the water container stays good (depending on the material usually easily up to 5-10 years, some even longer, but better safe than sorry). The water might start tasting not very good after 2-5 years or longer, and there might be minimal seeping of chemicals into it, but not to a degree to be worried about as your “emergency reserve” for a couple of days, at most maybe 2-4 weeks if you want to be extra-prepared for serious disruptions.
As long as this kind of water from unopened PET-Bottles or tetra packs does not show signs of pollution / contamination, has a really unusual smell or taste (not merely “slightly like plastic"), and the container does not look damaged or bloated, it should be fine. If you are not entirely sure, you can always boil it before consumption.
This method will cost you a bit every week which adds up over the years, but with it you covered the potentially most important crisis provision you hopefully will never need.
For storage, if you have unused space on the ground like under shelves, as long as it is reasonably safe from damaging the containers and kept clean, is a very easy way to stash your “emergency water supply” away, out of sight and out of the way, but easy to reach when needed. For extra safety you can use low plastic boxes to stash those bottles / packs in.

If you can afford it and like it, you can of course rotate this drinking water just like any other, and in areas where tap water is not all that safe for consumption this is anyway your main source of fluid you can rotate, and just keep some extra weeks worth of drinking water extra in your storage.

Cheaply rotate tap water: A cheaper version of “*store what you use, use what you store*” without constantly having to buy new bottles of water is to get yourself a bunch of store-bought water PET-Bottles (or other, similar long-lasting food grade containers, like those food-grade plastic jugs with a handle on top, usually half a gallon to a gallon, that you can also buy in stores). Enjoy the water from them, and then keep reusing those bottles (or other food grade water containers bought that way) by filling them with clean, drinkable tap water (municipal water). Simply rotate through those water containers then over and over – within 2-4 weeks your water supply should usually not spoil or even start to taste "flat".
Of course if you prefer your water always freshly from the tap, you can alternatively store an emergency water supply in those PET bottles, plastic jugs or gallon-canisters, which should stay okay for consumption for roughly 3-6 months (in some cases people even report a year or more, but don’t count on that), depending on your local water quality. After that estimated "good for use" period, pour the water out – maybe even use it to water your plants or garden, for cleaning, or whatever – and refill the containers with fresh water (carefully, not to contaminate the bottles / canisters during the process!).
From time to time, rinse the bottles or other water containers used that way with a decent food-grade disinfectant to ensure no algae, bacteria, etc. start collecting in them. Usually a simple mix of water with some baking soda, followed by a vinegar-water rinse, can do the trick – if you are not sure, read up on how to do this. This can go on for a good long while, and when the plastic containers start looking questionable as the plastic slowly degrades, you replace them with new store-bought water bottles. You can hope for 1-2 years with such thin PET

bottles, while special water storage containers can last decades.
Hygiene Note #1: Never drink directly from those “storage bottles”, as you introduce bacteria from your mouth that way. Keep the lid and opening always clean. If you want to drink from a bottle, have your separate drinking bottle(s) just for that, which you can easily clean.
Hygiene Note #2: Never keep anything but water in these bottles or canisters, or you risk residual pollutants lingering in them. For the same reason do not use containers which originally were for storage of other liquids. No matter how well you think you cleaned them, it can be insanely difficult to impossible to get small traces of dairy products and similar out of milk jugs and the like, and that's a recipe for your stored water going bad fast(er). When it comes to plastic bottles / canisters for water, really only use those that have never contained anything but water, and are food grade for your water storage.
Note about shelf life of tap water: It is not guaranteed, but most municipal, treated tap water, provided the pipes are all in good condition, can stay okay for consumption for several months, maybe even more than half a year to a year, beyond that it depends a lot on how you stored it, in what and where. So better count on a shelf life of the lower than the higher end, and if in doubt and a pinch always boil longer-stored, non-contaminated water like that for at least 2-3 minutes before consumption, to kill off potential pathogens that got in.
Glass jars instead of PET-Bottles etc.: If you don’t like plastic containers for your water, you can also re-use glass jars as you get them anyway over time from the food you buy. Make sure you really thoroughly (!) clean them with proper, grease- and stain-removing detergent, best is to also pasteurize them in boiling water at first, and from time to time after that, lid included. Fill them with water, put the twist-off lid on really tight, and you are building your good, basically for-free (cost of municipal water and a bit of dish soap / energy for occasionally sterilizing) water supply. In theory you can also boil the water in those jars (don’t fill them too much) and thus pasteurize it to stay good for a long time as an emergency supply.
Different from plastic containers, it is okay if these glass jars previously contained some other food items but water, just never anything chemical or non-food, as you cannot be sure if some residue is still clinging to the lid. You will have to be extra thorough with the cleaning though before you store water in those. I would also caution against using glass jars that previously contained any kind of dairy product, meat or fish – if you really thoroughly clean the glass it should be fine, but you can not be 100% sure if there isn’t some residue in the lid, and these types of food can cause problems more easily than others.
Store dark and cool(er): The longer you store tap water this way in your containers and rotate through them for your needs, the more important it is to store the water cool and dark, as it does not fully stop, but slow down the growth of any potential pathogens gotten in there (always assume some did). Close to or on the ground, in dark areas that are otherwise barely used, is thus a good choice. Especially keep away from direct sunlight, as it fuels algae growth and degrades most plastic containers over time.
The exception is if you use a PET-Bottle or a few dedicated only to solar disinfection method. If interested you can read up online on how this low-tech method works. The linked Wikipedia article is just a starting point, even the WHO recommends it as a low-tech method for countries with poor other means to get safe drinking water.
Note on chemicals / storage: Always keep the food-grade plastic containers away from chemicals that might (even through vapors) leak into them, like many petrochemicals. The same

is true about concrete: Don't store your plastic water containers directly on any concrete floor, as some chemicals in it can also leak through the plastic into your water. If you want to store plastic containers with water on a concrete floor, simply put a wooden board or something similar between the plastic container and the concrete floor. If in doubt, always keep all chemicals and your plastic water containers away from each other.
Note down the date: Even though you are rotating these bottles or other containers, preferably always write the date of filling onto it. You can use a Post-it with a rubber band, or some other note that doesn't easily come off but can be removed when needed, so you can replace it once the old note is filled with crossed-out and updated dates. This way you ensure that you do not accidentally have very old water sitting around in your rotation system.
Optional: Water Disinfection: If you want to make it extra safe, you can add some type of water disinfectant to the water you store like that yourself, but please check first the quality of your municipal water: Many already add a bit of disinfectant to it anyway, so you would be needlessly adding more with no beneficial effect. Different types of water disinfectants also have to be used in different ways. And remember: Boiling water for roughly 2-3 minutes (keep a lid on the pot to not lose a lot through steam, if water is scarce) kills off almost all the bacteria, viruses, and other pathogenic contaminants.
Optional: Re-aerating stored water: If your stored water tastes a bit "stale", a simple method to make it taste better again is "re-airing": Simply slowly pour it from one glass to another (or something similar) a few times, or thoroughly shake / stir it, and it should taste better.

Going even further or not: If you want to learn more about water storage, you can find plenty of sources online which explain to you all the details of what happens to stored water over time, the do's and don'ts in greater detail. I won't go into details here about more advanced things like water filtration and disinfection methods, there is a massive amount of information around online about this topic, from aforementioned solar disinfection method in PET bottles, to how to properly boil it, what modern water disinfectants can be used and how – be it chemical or even via UV light – to self-made or store-bought filtration systems, from the simple but effective LifeStraw method to small hand-powered water filters to large, expensive reverse osmosis filtration systems, which can cost you a pretty penny.
Additional methods for long-time "place and forget" approaches exist, like buying (commercially canned) **water in aluminum cans** with a safe, fresh shelf life of many decades without any plastic leaking in whatever small amounts into the water (and they cost quite a bit). Even **home canning water** in repurposed glass jars can be an option after thoroughly (thoroughly!) cleaning them, and it isn't that difficult (20 minutes of boiling is usually enough). Again, read up on it if you would like to learn more about these things, would like to do such, and of course have the storage space, money and/or jars & time for such an approach.

If you want to go even further with your "water storage preparedness" but not go full prepper, you can also consider getting some "**foldable canisters**" or other collapsible water storage containers, which take up little to no space when not in use, and if needed you can quickly fill them with tap water or other clean water sources to considerably increase your water supplies. You can get 3-5 collapsible, foldable containers / canisters like these, each holding 1-2 gallons, for as little as maybe 10 bucks or less, don't pay more if you just want them as an emergency supply to stash away. More sturdy ones can cost a bit more, but those fancy ones sold for 2-3

times more as “survival” items tend to be just overpriced without added benefits.
There are also special, large folding containers (like giant bags) you can place in your bathtub (if you have one) and fill pretty quickly as a quick large water container to last you for a good long while if you are concerned about an incoming hurricane, blizzard or such.
There are also single-use or even multiple-use **mylar pouches** in various sizes you can fill with clean water (maybe add a few drops of water disinfectant) and store in a sturdy bin as an emergency supply. Just be aware these bags, unlike plain clean water (perhaps slightly chlorinated), tend to have a limited shelf life themselves (usually a couple of years).
There are also “**water bricks**”, stackable, solid, rectangular water containers with even a spigot attachment for easy draining - they are very space efficient due to their shape and being stackable, and in the right size still easy enough to handle as you keep refilling them. From there the options are endless, up to even large water barrels, but this is getting more and more into real prepper territory unless you have a very large family.
If you additionally get some of the aforementioned basic types of **water filtration** and a small bottle of **food-grade water disinfectant**, including bleach (please look up how to properly use it!), you pretty much are getting close to prepper levels already, and if that is not enough to last you even through a prolonged disruption crisis, you are by then entering Mad Max levels of “disruption” with total collapse of all public institutions and infrastructure.

Water tends to be the first thing the local authorities and communities get back online if somehow humanly possible, for good reason. Outside of major droughts or truly catastrophic events, you should never need more than enough to cover yourself and your family for 2-4 weeks. I looked through multiple of the worst natural disasters of the last few decades, and in none did it take longer than 2-4 weeks for the majority of affected areas before water was one way or the other fully available again, usually much less.
As a general rule of thumb, if you want to practice crisis preparedness with water, you can count on up to 1 week during major disasters as the most typical scenario. With catastrophes that involve really massive damage to the infrastructure that can extend to around 2 weeks. Only in the worst of cases, with massive, widespread regional damage, have we ever seen in recent decades water supply taking up to 3-4 weeks before things normalized, and usually by then already an emergency infrastructure (like delivery of water canisters) had already been organized, so usually a 3-4 week “you are on your own” scenario is extremely unlikely. Only a total collapse of public infrastructure and organization, like large wartime or total governmental and public collapse can cause anything beyond that, and enters real "doomsday scenario" territory, and even then as we see / saw with the war in Ukraine, war does not always mean months with no water.

For non-industrialized nations with poor or no real infrastructure of course the situation can be vastly different, and there have been cases like the earthquake in Haiti 2010 or several cases in Africa where for several months, sometimes years clean drinking water became a real problem. People living in such places usually know more about how to manage that than I do.

My recommendation: Personally and for someone living in an industrialized nation, I always recommend having enough drinking water (½ to 1 gallon of water per person and day) in storage to last at least a week, better two weeks. Anything beyond that is unlikely to ever be

needed, but of course you can add more for up to 4 weeks if you want to and have the space – because it gets pretty space-intensive pretty fast. If you trust that you always have enough time to quickly “fill up”, you can lower the amount you keep in storage, and instead just get a few foldable canisters / containers you fill up when warnings about incoming bad weather or other issues arise that could affect the municipal water supply.
If you go by the bare minimum of 2 liters / half a gallon just for drinking purposes and 1-2 weeks, that means roughly 14-28 liters or 3.5-7 gallons of water to store as part of your general “crisis preparedness”, as recommended by various emergency authorities. For a gallon per person and day it would mean 7-14 gallons / 26-52 liters. Good storage spaces for this are your basement, under shelves, or other otherwise unused spaces – preferably cool and dark.

If you home-can water as your "store and forget" emergency water supply, I highly recommend checking it during the first year of storage every few months, and after that at least once per year: If the water / jar got contaminated, you will usually notice it within the first year, and can redo it after thoroughly cleaning the jar and lid. After that the yearly check of your canned water is mainly to check on the lids still being good, and of course checking if slower growing contaminants have spoiled your water. Such home-canned water usually stays okay for consumption for many years if not decades, provided it was slightly chlorinated, good municipal water, and the lid does not deteriorate. You can of course also always boil it before drinking in the unlikely but not impossible case you might ever need it.

Additional Food Supplies

The main foods listed above under "Basics" are things with a shelf life measured in years or even decades. There are a couple of staples though to also consider for your personal little pantry as additions if you have the space and use them frequently, as they can stay good unrefrigerated for many weeks if not a few months, depending on how you store them.

Onions

Onions are little nutritional powerhouses, and even have a range of health benefits – to the point of "onion syrup" being an old household remedy for head colds. They store fairly well if frozen (see below) and have a pretty long shelf life if turned into dry onion powder or flakes (see herbs & spices), the latter also being a good alternative to fresh onions in a variety of recipes.

Fresh onions behave a bit similar, but not the same as fresh potatoes: They like it dark, dry, cool and well ventilated, and for that reason they were in the past often stored in cellars. Different from potatoes, they tend to tolerate warmer temperatures better, as long as ventilation is ensured and the environment is not too damp. If you have no such storage space perfect for them, you can keep them similar to potatoes: In a basket with a kitchen towel or such spread over them, so that they are stored dark and well-ventilated, and preferably close to the ground in a cool spot in your home, while of course keeping them safe from pests. Their biggest enemy tends to be moisture, so besides the classic onion basket alternatively a paper bag, burlap bag or net in which they can breathe and no moisture can get trapped is a good way to store them.

Avoid stacking them too tightly and thus preventing airflow between them, and allowing for more buildup of moisture. Plastic bags or otherwise airtight containers, or storing them close to sources of moisture is a big no-no for onions.
An old method to store them, which can enhance shelf life even further, is to store them in (old) nylon stockings, separated by knots, or some other type of net. If kept in a dark and well ventilated place, the classic way being hung up from a shelf in a dark pantry, they can store really really well. This method also works well with **garlic** by the way.

Depending on the type of onion, they can stay good anywhere from 1-2 weeks (like typical white onions) to up to 4-8 weeks for others, like yellow onions. Optimal storage conditions can extend this even to several months. Just as with potatoes, check them once a week and remove any onions that show signs of mold, rot, or even just the onion going soft (as a typical first sign of incoming spoilage), or they will spoil their neighbors faster than you might think.
Peeled and cut onions need to be refrigerated, of course. If you have just half an onion you want to store this way, place it cut side down – that tends to slow spoilage at least a little.

Do not store onions and potatoes together. Nor store them with apples, for that matter. These and some other fruits release ethylene gas, which makes your potatoes “ripen”, meaning they will sprout and then rot faster. Furthermore, potatoes release moisture, which as mentioned is the #1 factor for your onions to eventually rot. You can store potatoes, apples and onions in the same general area, but not too close together, like next to each other on the same shelf or even even worse, in the same basket.

Onions also exist as preserves marinated in oil or pickled in vinegar. Stored unopened in an airtight container, dark and cool, they can last several months, and the oil or vinegar take on some of the onion flavor and can be used for cooking purposes.

Pickled onions in vinegar can reach a shelf life close to other pickled or canned/pickled food of at least 1-3 years, often easily 2-5 years, with similar signs of spoilage as with other pickles (bloated lid/can, bad smell, cloudy or slimy liquid). They are of course softer, milder and somewhat acidic in taste, and can slightly change their color due to the pickling.
If you like the taste they can be a good alternative or addition to your supply of fresh onions, with a decent shelf life, and **onion powder** as a seasoning alternative with a long shelf life. The vinegar takes on some of the taste of the onions and can also be used well in recipes.

Onions marinated in oil can be delicious, but please also do not try to store onions in oil like that: They can not just rot but at worst cause botulism, which can be lethal. Leave that to people who really know what they are doing and have the right tools – meaning industrial methods. Industrially produced onions marinated in oil can have a shelf life of usually 1-2 years in their unopened container, but after that they soon have to be considered not safe for use anymore. This is one of the types of food where you better not take risks, even if there is no risk for botulism – don’t try to store them more than 1-2 years, because the oil can go rancid, the onions can start spoiling along with it, and so on. Until then though they are an interesting alternative or

addition if you like them, with the oil taking on some onion aroma and thus an interesting option for some recipes.

Potatoes

The old potato cellar had the perfect storage conditions for **fresh potatoes**: cool, dark and well ventilated. Under such conditions potatoes can stay good for several weeks to several months, and they used to be a staple through winter times before fridges and other food preservation methods became more widespread.

Optimal temperatures tend to be around 7-13°C (45-50°F), and preferably kept steady. Temperature fluctuations are to be avoided. Sadly fridges do not work for them, as the temperatures are too low and the climate in a fridge is different, and causes the taste and texture of potatoes to change until they are unpalatable and difficult to prepare. Stored too warm on the other hand causes potatoes to sprout or rot faster, while exposure to light also causes them to sprout faster and to go green and produce solanine.
Potatoes need to breathe, and stored not too dry (air humidity around 85-95%) but also not outright sitting in moisture. If you store them in plastic bags or even worse, airtight containers, they will rot faster, while stored too dry, they will shrivel faster. That's why storing them in slatted wooden crates, burlap or paper bags, or in baskets and kept dark or sufficiently covered to keep the light out, tends to be the best approach for most household purposes. If the storage area is a bit too damp, you can place some old newspapers underneath or even between them to help absorb excess moisture.
A cool, not too humid and not too dry cellar or dedicated, cool pantry room tends to be the best place to store them, as long as pests can't get to your potatoes there. If you have no such storage space which fits the needs of potatoes, you can store them at room temperature and make do with what you have: If possible, keep them close to the ground where it is often a bit cooler, maybe also close to a wall that is cooler than the others, and in some kind of basket which allows them to be well-ventilated, and then spread an old kitchen towel or something like that over them so that they get the darkness they need, for best possible storage conditions given the circumstances.
Note that unwashed potatoes, with still bits of dirt clinging to them, tend to store longer and better than those nice and clean washed ones we commonly get nowadays in most supermarkets.

If you want to store potatoes for more than just a week or two, I highly recommend checking them every week, and removing any that have started to rot. A single rotting potato can ruin its neighbors pretty fast from the moisture, mold, bacteria and gasses it releases. Just like the proverbial one spoiled apple, one spoiled potato can ruin the entire basket.
If your potatoes have wrinkly skin, smell bad, feel unusually soft, mushy, show signs of mold, or they are very green, do not eat them – these are common signs of them having gone bad. Especially if they turn green, that's a common sign of potentially elevated solanine levels, a toxin which in high doses can cause pretty unpleasant poisoning symptoms. If they show only small areas of green that do not go too deeply into the potato you can just peel them a bit deeper and

they are usually still fine. For more on that topic, again read up online, there's plenty written about it.
Sprouted potatoes can usually also be still eaten just fine, as long as the sprout is not longer than roughly 1cm for a typical-sized potato – just cut away the sprouts with a bit of extra flesh around them, the rest of the potato should be fine. The same is true if a potato has just a small mushy spot (not moldy or truly rotting!): Cut it away with some of the surrounding area, smell the remaining potato, and if it smells fine it is usually still perfectly fine for consumption.
If potatoes taste bitter or leave a scratchy or itchy feeling in your throat or mouth, throw them away, that is a common sign of too much solanine in them, even if they were not green and had no sprouts.

Potatoes are a good source of potassium, some B-vitamins, some antioxidants, and even some vitamin C, although some of the latter gets destroyed when you cook them, which you have to do for consumption.
They have a reputation for being "empty carbs" or "make you fat" or "they make your blood sugar spike", but that is not justified. Potatoes have less calories per 100g than typical rice and pasta, and they contain more nutrients although significantly less protein. Furthermore, there is a simple trick to turn "potatoes make your blood sugar spike" into the opposite: If you let your cooked potatoes cool down, some of the starch "crystallizes" (correctly: retrogradation) and becomes resistant starch, which actually helps keep your blood sugar under control.

There is a caveat about this though: Cooked potatoes are among those types of food that can spoil very fast. So always store your boiled potatoes in a fridge, either in an airtight box, or still with the peel intact, or both, which somewhat protects them from spoiling. Peel those potatoes from the fridge then only before eating or otherwise using them in your recipes. A simple way to store cooked potatoes well in your fridge for roughly 2-3 days or so is keeping them unpeeled and ensuring they are fully dry, then stacking them so they have some air circulation, using an open bowl or box lined with a paper towel or kitchen towel. Then spread a second towel over the container so they are a bit protected from above.
Even if you like your potatoes hot, as long as you consume them with a good source of protein and a bit of some type of healthy fat they are a healthy type of food that keeps hunger away for a good long while, even if they cannot meet your protein needs the way legumes + rice/wheat can.

Canned, ready-to-eat boiled potatoes (already peeled) **in glass jars or cans** are an alternative to fresh potatoes, and can last easily 1-3, if not 2-5 years or more, if stored properly (no corrosion of the container, not too much light). They tend to be more expensive than fresh potatoes, but are a good addition for your pantry if you really like potatoes. As they are already cooled down, they also usually contain more of the resistant starch mentioned (see above).

Apples

Apples belong to the few types of fruits that can really last a while at room temperature before spoiling, plus you can easily see, smell or taste when they are not good anymore, and there are

some ways to make them last longer. Of course the hotter it is, or otherwise the worse the environmental conditions (including pests!), the less you can hope for the time frames I am giving you here. And there is no guarantee that an apple you just got a few days ago which looked perfectly fine turns out rotting or moldy suddenly.

“An apple a day keeps the doctor away” has been a saying for good reason, as they not only offer vitamin C, but also a host of other nutritional benefits (look it up if interested, it would go beyond the scope of this document).

Nowadays the fresh apples you can buy at a store tend to be also somewhat treated with a variety of methods, like some special gasses which keep them fresh a bit longer, some special coatings which make them lose moisture a bit slower and help a bit against spoiling, and similar tricks. These things, together with potential pesticide residue, are also why you should wash your apples, just as the apple fresh from the tree should be washed in case some pathogens got onto it (like a bird or other animal pooped on it, rain washed off most, but some invisible bits are still on there).

At room temperature in moderate climates stored in the coolest spot of your home you can hope for fresh apples to stay okay for around 1-2 weeks. As long as the peel was not damaged or they got otherwise damaged, rot or mold is kept at bay for a while and they just lose moisture, which you can see from the peel slowly getting a bit wrinkly. These apples might not taste as good, juicy and fresh anymore, and they might have lost some vitamin C by now, but they are usually still perfectly fit for human consumption.
For week 2-4, undamaged apples without pests getting to them will then continue to get wrinkly as they lose moisture, and with it, taste and some of their nutrients will degrade more and more. Anything beyond a month and the risk of rotting, fermentation, or mold increases fast.
If you have a way to store apples cooler than normal room temperature in moderate climates, like the old basement cellar or cool pantry where our great-grannies used to keep apples over the winter, you can still use those to keep apples fresh for longer, and significantly slow down their degradation. Under such conditions you can hope for apples to stay good for consumption, even if not perfectly fresh anymore, for 1-3 months, under perfect conditions even a bit longer. When storing apples in such a space, make sure if possible that they do not touch each other, and instead place them next to each other on a wooden board, rack, or something similar.
Some types of apples also stay fresh significantly longer than others, such as Boskoop, Elstar or Granny Smith. Those types of apples which are very sweet and soft on the other hand tend to last not as long and well, but still pretty good considering these are fruits.

Note that if temperatures are really warm, like hot summer days in moderate climates, or if you live in a warm to hot climate, this will significantly change the above numbers, just as if you live in a place that tends to be extremely dry (they dry out faster) or damp (they probably mold / rot faster). So if you live in the sweltering heat of certain parts of the southeastern states of the US, I fear your apples will not do as well as outlined above, unless you can find a cooler spot where they'll do better.

As a rule of thumb for how to store apples optimally:

- They need sufficient ventilation, and cool but not freezing storage conditions (optimal is usually around 2-10° C / 36-50 F), good humidity but not too much (80-85% or so would be optimal), to stay fresh the longest.
- They like good humidity, but not getting moist. Avoid anything that exposes them to too much moisture, including water condensation on them or, if they are stored touching each other, between them.
- If the conditions in the storage area are a bit too dry for them, and you do not have other things stored there which are sensitive to moisture, you can place a damp (not dripping wet!) piece of cloth like a kitchen towel close to, but not touching, the apples. The evaporation will probably raise the humidity enough for them not to wrinkle as fast. Add new moisture to the cloth from time to time as needed.
- If the conditions in the storage area are a bit too moist for them, you can place a bowl of salt next to the apples or sprinkle some between them (without touching them!). The salt will absorb some of the moisture from the surrounding air. Old newspapers placed underneath them can also help.
- Do not store apples in airtight containers, it will make them go bad faster due to the ethylene they release as a “ripening” gas.
- The aforementioned ethylene is also why you should not store your apples together with other fruits, which will ripen and then rot faster. If you want fruits to ripen faster, like your green bananas, an apple between them of course can be helpful.
- Do not wash them before storing, as you are destroying some of the natural (and maybe additional industrial) protection the apple has against rot and mold. Wash them only before you eat them.
- Your fridge is another place of course where you can store apples, and it mimics the conditions of the old cool pantry room or cellar surprisingly well. Lacking a good cool space / room for them right now, I usually keep mine in a dedicated part of the vegetable drawer as the best spot to keep them fresh, and as I store nothing in there which could be negatively affected by the apples – once more, YMMV.

A classic way to store apples, as I learned it from my granny, is a cool pantry (or simpler space) with a wooden board or slatted frame, upon which old newspapers are spread. Each apple gets its own spot, neatly placed next to the others.
The other method was low baskets of apples, if storage space was a bit cramped, and not piling too many apples on top of each other, so that those at the bottom wouldn't be exposed to too much pressure and get damaged. Each gets wrapped in a bit of old newspapers so that they have a good individual environment, and if any of them gets bad, the mold / rot cannot get to the others immediately.
Storing Apples in a plastic bag with (enough) holes can also be surprisingly helpful to increase their shelf life. That’s why you might see larger bags of apples at some stores in such bags. The bag allows for a bit more CO2 and a bit less O2 to accumulate, ethylene cannot accumulate as much as in an airtight container, and moisture does not get out as fast.
Stored like this in the coolest place of your home, like a basement, on the ground (keep pests away though!), next to a cooler outer wall or such can significantly increase their shelf life, while

if you store them right next to the greatest sources of heat and steam in your kitchen they will go bad much faster.

If you want to store apples, check first for any that shows signs of damage: Those need to be eaten first and probably fast, as the damage – even tiny, barely detectable tears in the peel can be enough – is where rot or mold usually gets in. Store them so that they are well ventilated, not too dry and not too moist, and preferably cool, and you can get between 1-2 weeks, at best even months out of your apples.
That doesn't mean "get a giant bag of apples and store them in your cool basement" (unless you want to). But when it comes to running a pantry, and if you like apples, having some at home can be a great thing for fruits that don't rot on you within mere days.
Others rush to stock up on rice, dry beans and toilet paper when there is a warning for a natural disaster – you, having your well-run private pantry, might instead get that 20 pound bag of apples for your family, as you know how to store them properly, and while others freak out the coming days and maybe even weeks… you just enjoy an apple with your morning breakfast ;^)

Once more, trust your eyes and your sense of smell and taste when it comes to apples. The following is how I was taught it, and found it also confirmed from various sources again and again:

- If they look and taste like apples, just a bit less fresh, they are most likely fine.
- If you detect signs of, or smell or taste hints of, fermentation (tastes a bit like alcohol, or comes with a strange "sparkly" or "fizzing" sensation), throw them away, most likely the entire apple is affected.
- If it is just one spot that shows signs of damage (typical brown pressure mark), you can just cut that away and enjoy the rest of the apple.
- If there are signs of rot, you have to be careful but not overly so: You can cut away the rotten part with quite a bit extra (about ½-1 inch / 1-2 cm) around it, and the rest is most of the time still good. If you have a normal sense of smell and taste, you will know – hints of rot can be tasted if it has spread through the entire apple. If you don't want to risk it, of course toss the apple showing signs of beginning rot, but most likely you are wasting a good chunk of perfectly good apple. If several spots show signs of rot, or the entire apple feels suspiciously "too soft" / mushy (not merely a bit softer from aging), that's when you definitely need to toss it.
  The reason why: Most "rot" is simply enzymatic degradation, sometimes combined with some bacterial activity, and is usually confined to the location where the apple was damaged. As long as you cut that area away and a bit extra, the rest of the apple is most likely just as little affected as the undamaged apple which sat next to it and you eat just as well without hesitation.
- If there is mold, throw it away. It is very likely that some of the fungal growth (mycelium) and the substances it produces (mycotoxins, which are often what actually can make us sick when eating moldy things) has spread already into other parts of the apple, and you might not be able to detect it by visual inspection, scent and taste. This is btw how "wet" foods like apples, or "fibrous" ones like bread, are different from e.g. hard cheese, in which mold (mycelium) cannot easily spread, and you can safely cut away any moldy

spots with some safety margin (depending on how large the spot, between ½ and 1 inch / 1-3 cm) and eat the rest just fine, while in fruits, bread and similar foods you cannot tell how deep and wide the mycelium has already spread, or how much of its mycotoxins have already seeped through (for wet produce like bell peppers or tomatoes).

Bread

Normal bread, as everyone knows, goes moldy pretty fast. You can keep it good a bit longer in the fridge (see below) and most types can be frozen quite well, but that's it. There are a few types of bread though which differ from this rule, if properly stored. Normal bread from plain flour has very limited nutritional value, similar to plain flour itself besides the protein & carbs, but is still a staple for many people as it is filling and offers good energy for your body.
If you like it, wholegrain bread is even better nutritionally thanks to more dietary fiber: instead of a quick energy kick, it will fuel your body longer, avoiding blood sugar spikes and so forth. The drawback: Wholegrain bread tends to spoil a bit faster even if it comes as a type with a longer shelf life, as the natural oils in the wholegrain wheat can go rancid.

Probably the most famous form of long-lasting bread is **rusk**, which comes in both plain flour and wholegrain variations with a somewhat better nutritional profile but slightly lower shelf life. Baked twice, it is so dry that most variations keep quite well for 1-2 years (whole grain a little bit less), and even way beyond that if it was kept in unopened, airtight original packaging and was stored properly. Usually if it does not smell bad, stale, rancid and the like, no pests got into it and no humidity, rusk can stay potentially good for many years if optimally stored.

Crispbread / knäckebröd originally from Scandinavia is mostly similar in shelf life and nutritional value to rusk, just usually made from rye, and instead of twice-baking, it is first baked, then slowly dried at moderate heat, resulting in a similarly dry bread. You absolutely need to keep it in airtight, dry containers if you want to reach 1-3 years of good shelf life though and potentially even longer, as it will absorb moisture pretty fast and then go stale.
The typical recipes make it quite a bit more nutritious than typical "plain white flour" rusk, and it can be a good nutritional and flavorful option if you like the taste and crunchiness, working well with stews, soups and the like, as well as with dips or spreads.

You can also **make your own rusk / crispbread versions**: Take any sliced bread you really like, spread it out on a baking sheet in the oven, wedge a heat-resistant spatula or something similar into the oven door so the moisture can get out, and then slowly dry the bread at low heat (50-70°C) until absolutely no moisture is left. Store in an airtight container, and depending on the type of bread it might stay good for 1-3 years, maybe even a bit longer. Depending on how high the electricity costs where you live it might not be worth it though to do this yourself, compared to the price of rusk or crispbread – unless you just love the taste of a particular bread enough to make it worthwhile anyway. If you used the oven anyway, letting it coast on the remaining heat before keeping it at low heat might make it a bit more worthwhile.

Other hard and **thoroughly dry types of baked goods**, like hard tortilla shells or dry crackers are basically just other versions from other flours, but all share more or less the characteristics of rusk and crispbread, nutritional value depending on the grains used.

Pumpernickel is an old type of German dense, slightly naturally-sweet rye bread made from sourdough and whole grain, made and baked in a somewhat longer process that yields a very moist bread, which nonetheless if stored (in its modern version) in its original, airtight plastic packaging can easily have a shelf life of 1-2 years, potentially even a bit more, even if the best-before date suggests significantly less. Once you open the packaging or it gets damaged though, it has a fairly high chance of going moldy soon, so consume it fast.
A few packages of real Pumpernickel can be a good part of your pantry provisions if you like the taste, staying good way longer than fresh bread while having an excellent nutritional profile – rich in minerals and dietary fiber, with a relatively low glycemic index.
Contrary to rusk or crispbread it still has a somewhat moist texture, and works well not just together with stews or dips, but also with spreads or for sandwiches. Due to its load of dietary fiber and good nutritional value you need less pumpernickel to feel sated, compared to normal slices of bread like baguette, toast or similar “fluffy” breads.
Note that Pumpernickel, if available in your region at all, has been adapted in some countries in its recipe and barely resembles the original in taste, texture and also shelf life. So check for yourself how long your local version of “Pumpernickel” really lasts in terms of shelf life, and whether it is really as nutritious as the original.

You can also get some types of **canned bread** which might be a bit more expensive than normal fresh bread. If rusk, crispbread, and pumpernickel (if available in your area) are not your thing, and you want to have a bit of “emergency bread” at hand in case your usual fresh bread got moldy and your spare packages in the freezer somehow are also gone before refilling, these types of canned bread are a decent option. They come in a wide variety of types, and due to being usually baked in the airtight can, or canned under sterile conditions after baking, they can have best-by dates measured in years from purchase, and their real shelf life can easily last 5-10 years, under perfect conditions and depending on the type of bread even longer. Trust once more your eyes, nose and taste buds whether it’s still good.

Yeast

Yeast is an essential ingredient if you want to do your own bread baking, and a variety of other types of recipes, unless you make bread via sourdough starter or baking soda for things like delicious soda Bread. Some baking supplies like flour, baking powder and salt (in some cases also vinegar and whole egg powder) are also discussed elsewhere, and with that you have your essential baking supplies.
Genuine disclaimer here as well: I am not big into baking, even though I know and have practiced the basics. So the baking aficionado might know far more about this and additional options not listed here. I speak from a good foundation passed down to me by my family and

some extra reading up on it and a bit of own practice, but not the heights of a passionate, experienced baking enthusiast.

If you don't know what yeast is used for, the entire section here is probably anyway not for you (yet), and you need to read up on how to bake anything from bread to other delights like Sweet Breads to even making yeast dumplings.
Not all yeast is equal – here are the two main types.

- **Fresh yeast** has a very short shelf life measured in days to weeks depending on how cool you keep it, so store it in the fridge and use it soon. Get that fresh when you plan to bake anyway if you like, but that's it. You can freeze it to get maybe 2-3 months of shelf life out of it, but I wouldn't count on more. There are also special, vacuum-packed types of packaged yeast which last longer in the freezer.
- **Freeze-dried Yeast** has the yeast put in a sort of hibernation. As a result it lasts much longer: unopened packets of instant and active dry yeast can last 2 years. Once opened you have to use it in 3-4 months if stored cool, otherwise it loses its potency within weeks more often than not. In a freezer you can probably keep it good enough for use somewhere between 6-12 months, if you are lucky 2-3 years.

If you want to freeze yeast properly, please read up on it yourself, this is getting even lengthier than it already is. Otherwise simply stick with freeze-dried yeast and get it in packages suitable for your needs, with opened packages stored in an airtight container in the fridge. Store cool and dry and dark.

Also get and store yeast according to your real yeast needs: If you bake only once every blue moon, getting the more expensive freeze-dried yeast in small, sealed packages is probably still the cheaper option for you, and you can just store the stuff well in your pantry. If you bake a bit more often, you can get it in slightly larger but not big packages, refill the opened package into an airtight container for the fridge (here come those glass jars again you keep holding on to, just make sure no acidity or salt residue is in them!). If you habitually bake your own bread and also otherwise love baking, it might absolutely make sense to buy yeast bulk, and then properly freeze those parts not currently in use in a couple of pre-measured containers. But if you are that level of baking deity, you probably know all about yeast already, and don't need this section.

Note also that yeast has mainly two problems that can make it "go bad": One is really spoiling, leading to no-fun times for your tummy, but that is pretty rare. The other, more common issue is that the yeast microbes in it die, and then you don't get a nice fluffy dough but a flat one – and you might have to think about salvaging it for some other use if you don't have any working yeast around. This is also the reason not to mix yeast directly with salt, as it kills the yeast microbes. You can and often have both eventually in your dough, but do not put them right together in there. First mix one, then after a bit the other into your dough, or the salt vs yeast game ends once more 1:0.
Storage conditions also matter a lot for how well your yeast keeps: The warmer it is, the faster it goes bad or dies; the colder, the better it keeps. It WILL lose effectiveness over time, even if technically "still good". So if you have some older yeast that's otherwise okay and you still want

to use it (which is fine), just use a bit more than you normally would. Rule of thumb: At room temperature it loses between 10-25% “yeast power” per year, but there are exceptions. You can have a package of freeze-dried yeast less than a year old and it does nothing to your dough (rare, but I've seen it happen with a perfectly made dough), or you can find an old package forgotten in your pantry, 10+ years old, and – if you are willing to risk it – surprise, it still works perfectly fine.

Feed the Yeast trick: I have never tried this myself, but heard about it working well: If you have some older yeast you think might not be that good anymore, feed the yeast some sugar before use: mix the yeast with a bit of sugar and some warm water in a bowl. The yeast, if still alive, will activate, start eating the sugars, and have a chance to multiply before you add the other ingredients. If you want to know more about this, read up on it from people who have used this method already.

Eggs

You might be surprised to find eggs here, given we tend to store them nowadays always in the fridge, and that is the best spot indeed for most modern households. In theory though they can stay good for a while at room temperature, provided they were not washed. The latter is common in the US, which requires them to be refrigerated from there on. In Europe it is common not to wash them, and thus they are sold unrefrigerated. Basically if you can buy your eggs in a supermarket off the shelf unrefrigerated, they were almost certainly not washed.

As long as you store unwashed eggs without the surrounding temperature changing too much, without micro-fissures forming in the shells, and no condensation of water happening on the shell (like through changing temperatures), they can usually keep just fine for a week, sometimes 2-3 weeks, at room temperature in moderate climates up to around 18-21°C / 65-70 F, after that it gets increasingly problematic.
Warmer temperatures, like summer in Central Europe, or almost year round in Southern Europe and the southern states of the US, significantly reduces that timeframe. In a cool, dark place that's not too dry or moist, like old food cellars, they can allegedly stay okay for up to half a year according to some reports, but I never tried this myself.

You can do the **egg float test** to gauge the age of eggs, but the longer you store eggs at room temperature, the less reliable it gets. What will be very reliable is the smell test: Eggs smell really horrible when they have gone bad. So if you are not sure about how good a couple of eggs still are, don't crack them all at once into one container, potentially mixing a bad one in before you notice. Open them one after the other, smell them, and you can identify the bad ones by their smell and color.

If you want to store fresh eggs longer at room temperature without as much concern about temperature changes and so forth, **water glassing** is a traditional method of egg preservation. For this you use **pickling lime**, aka calcium hydroxide. If you want to know how exactly this works in terms of chemistry, physics and biology, please read up on it elsewhere.

You can do this well only with unwashed eggs, the surface reasonably clean (no dirt, feathers, feces, or other things sticking to it) but not washed, and without any damages to the shell. Then you need a jar (glass or ceramic, in theory food-grade plastic that can withstand the pickling lime), and boiled, clean water. Don't use metal containers for this, as the metal can react with the pickling lime. Also don't use eggs that show clear signs of contamination, like unidentified brown spots sticking to the shell (often a sign of poor nest hygiene), since you cannot reliably clean those away without washing, which would destroy the natural protective layer unwashed eggs have.
You fill the container with the boiled water, let it cool down to room temperature, and mix about 20-40g of pickling lime per liter of water (not the other way around, to avoid lumps). As you let it stand, a slightly milky solution forms, with maybe a bit of residue at the bottom – don't worry, that is okay.
Now you place the eggs carefully into this solution – don't drop them in, to avoid cracking the shells. Optionally you can place the pointy end downward, this has to do with the position of the air pocket and the yolk in the egg (read up on it elsewhere if interested). All eggs need to be completely covered by the water/pickling lime "water glass" solution. After that you close the jar, although it doesn't have to be airtight, just covered.
Stored preferably cool and dark (around 15-20°C / 59-68°F), you can keep eggs fit for consumption quite well for 3-6 months, and in some cases up to a year, rarely even a bit more. The cooler and more stable the climate you store this jar in, the better and longer the eggs will keep. At warmer room temperatures (20-25°C / 68-77°F) and according to information I could dig up, you can hope for a good shelf life of up to 2 months, and up to 4 months if you don't mind the egg white getting a bit more runny. Beyond that you are risking more and more of the eggs going bad.
This does not work with washed eggs, and the older the eggs, the shorter you can store eggs this way. If eggs are not fully covered by the lime-solution, they are not protected, so check on eggs you store like this from time to time, and if needed top up with more solution of boiled, cooled water and pickling lime (5-10g per 250ml).
To use these eggs, remove them from the solution with a clean utensil, and rinse them well. If you want to use them for cooking or baking, open one after the other and smell them to identify any that might have gone rotten. If you use them for hard boiled eggs, you will notice this of course only after boiling and peeling.
Note that water-glassed eggs slightly change due to the pickling lime: The white can get a bit more runny, the yolk a bit more fragile. The longer you store them like this, a slight change in taste can also happen: They taste a bit "flatter", less fresh, and sometimes or eventually a little bit "mineral-like" or alkaline. For scrambled eggs, cooking & baking they are perfectly fine though, as long as you don't mind the slight change of taste, and some people even like it.
(Note: The above follows the standard procedures as I know them, but my own experience with this is limited, so if you want to try this method please check also other sources besides me writing about it here, as I always recommend checking multiple sources for anything relevant.)

You can also store eggs via water glassing in sodium silicate, but I won't go into the details here, as this method requires more precision, and the taste and texture of the eggs can change more noticeably than with pickling lime. If you use this method well, eggs can potentially stay

shelf-stable for up to a year or even two with no issues (from what I've read, never tried it myself), or they go bad fairly fast. So technically it is a superior method, but more demanding, and harder on the eggs.

Please do not store your eggs in oil, whether boiled or raw, washed or unwashed. Yes, this is another method how eggs traditionally have been preserved, but you run a very real risk of Botulism with that method.

Food for the soul ;^)

Many “preppers” talk a lot about what lasts long, what keeps your body going and maybe about good nutrition, but few mention how appetite fatigue can creep in fast if you eat the same, bland things over and over, and how your spirit and motivation take a massive dip if you don't enjoy your food and your treats – and many treats have a surprisingly long shelf life! We covered "no bland food" with herbs & spices, seasoning & flavoring, but don't skip the following section just because it isn't covering the needs of your body.
Especially when things get a bit rough, price spikes make things more expensive, or at worst a crisis hits, running out of your favorite beverage or treats can be a real downer, while a nice hot cup of coffee, tea or chocolate, or a nice candy bar or a bit of snacks can make a real difference on how you feel, and thus on how well you operate also throughout the day.

A little friendly reminder / warning about the temptations: Of course don’t make these things a major part of your pantry, just as they shouldn’t be a major part of your diet. Treat them as the nice little extras you keep a bit of in reserve in your pantry.
For those things that are great temptations you might find difficult to resist, like candy, crackers, chips and so forth, don’t get extras. What you don’t have is not a temptation. It might suck if you don't have them during an emergency or supply disruption, but that’s still better than constantly stuffing your face with those chocolate bars after you bought a box of 10, and can’t resist their siren call from your pantry.

Coffee & Tea

Coffee and **Tea** (green or black) have a surprisingly long shelf life if stored correctly, and for many people they offer the kind of comfort, sense of calm and "everything's good" feeling that can be very important – nourishing not just your body with good food from your pantry, fridge & freezer, but also your spirit with a nice beverage to go with it.

Of course **coffee beans** last longer than **ground coffee**, you just need a coffee grinder (recommendation: have a hand-powered one, and keep it as a spare, in case of power outages), and then there is **instant coffee**. In an airtight or even vacuum-sealed container, ground coffee keeps well beyond its best-before date. Perfectly stored it can even last 1-2 decades or more. If you don’t mind the slightly different taste (or like it), consider having at least some instant coffee even together with your normal ground coffee: Sometimes it might be useful to just need some (hot) water, no need to brew your coffee.

Black & Green Tea also has a very long shelf life – the ancient "tea bricks", if kept dry and well packed, could last even decades. As long as humidity does not cause mold or rot, or pests get into the container, both coffee and tea will rather just become less aromatic or go stale over time, and simply do not taste good enough anymore to make them worth using.

Fruit Syrups

There are also fruit syrups which can be added to create flavored drinks similar to fruit juice – just with additional sugar which acts as a preservative for these syrups. Besides true fruit syrups, there are also things sold as “syrup” that come straight out of a chemical lab and might look the part – you do you if you want to drink something that looks to me like coolant… ;^)

In a pinch you can get almost the same result as with fruit syrups also with **any kind of jam**: Just add a spoonful of jam to a glass of water (more or less), stir well, and you have a fruit-flavored beverage with a bit of extra calories and few nutrients. Jam with “fruit bits” in it of course works less well for this. Often jam is also significantly cheaper than those special fruit syrups sold as flavoring for your water.

Cacao / Cocoa Powder & Drinks

Cacao and cocoa powder are what make your chocolate bar taste chocolate-y, and it is actually surprisingly healthy – the Aztecs had good reason to revere it. Stored in an airtight container, kept dry and not too warm, cocoa powder, depending on the specifics, can stay good for many years, and you will notice when it goes bad due to smell and taste: It goes stale or rancid. The exact shelf life hinges not just on storing it well, but also the type of cacao or cocoa powder: The more oil it (still) contains, the more likely it will eventually go rancid, and the more acidic types can at times withstand changes in aroma a little bit better.
A bit of cocoa powder, a bit of milk powder, milk or coconut milk, and a little honey, sugar or stevia can go a long way to brighten your day – or warm you up if drunk hot. Of course it's also great as an ingredient for baking.

There are of course also **“instant hot chocolate” powders**, which mostly just contain cocoa plus some extra ingredients like emulsifiers to help the powder dissolve more easily in water, plus lots and lots of sugar. If you like those for convenience and don’t mind (or actually want) the tons of sugar they contain, they are of course also a fine “beverage for the soul”.

If you want greater versatility though with just one product, stick with pure cocoa powder and you can **make your own instant chocolate powder**. All you need is some milk powder if you like that in your hot chocolate, and you can add sugar, stevia or any other sweetener as you like. With this you will end up already with a flavor and texture pretty close or for your taste even better than those instant powders. Industrial instant hot chocolate usually also involves some anti-caking agents, emulsifiers, and additional flavorings. You can try adding a bit of vanilla powder or vanillin (found among baking ingredients) to get closer to the kind of flavoring you are probably used to from instant hot chocolate powders.

Note that without an emulsifier this self-made mixture will easily clump. You can work around this to a degree by first creating a smooth paste with just a little water or milk, then heating and stirring that paste well in more water or milk. Another method that can work well, including for cold beverages, is to get a **milk frother / handheld frother**. They are available pretty cheaply as simple battery-powered gadgets, and help to stir such mixtures well enough to disperse most clumps. I use them for anything from quickly whisking my whole egg powder with water to making such beverages from simple ingredients.

If you want an emulsifier for your self-made instant hot chocolate you can also get lecithin, which is one of the most widely used food additives and emulsifiers, and at the same time a dietary precursor of choline, an essential nutrient. Without such an emulsifier (0.5-1% are enough), your self-made hot chocolate powder will require more stirring and definitely some heating to create a hot chocolate, while cold chocolate drinks from that are difficult. You can get lecithin stupidly expensive as a nutritional supplement, or bought in somewhat larger quantities (compared to supplement pricing) relatively cheaply as a cooking & baking ingredient. Note that as a fatty substance lecithin can go rancid, and has a decent but not super long shelf life, even though it is shelf-stable. You can freeze it with no issues though, and thus put your larger bag in the freezer, while keeping only a small amount from it around for your cooking, baking and other purposes such as making your own instant chocolate beverages.

Without at least a little bit of sugar or maltodextrin as a dispersing agent you will also find it more difficult to create a good, smooth chocolate drink from your cocoa powder + other ingredients. You can replace some though with sweeteners like stevia or sucralose.
If your self-made instant chocolate powder still doesn't taste "quite right", add a pinch of salt. It might sound counterintuitive, but look at the package of those instant powders, and you will almost always find a bit of salt in them.

You can also **melt chocolate bars** in hot milk, coconut milk or water, and get hot chocolate that way as well, duh.

Chocolate & Candy Bars

Chocolate is mostly sensitive to heat and oxidation, but properly stored in an airtight container and not too warm it can also stay good for easily 1-2 years (some even more), depending on the exact type of chocolate, whether it's a plain chocolate bar or a chocolatey candy bar with or without particular fillings and additions. So your bar of chocolate, and depending on ingredients also candy bars especially like Twix (mostly just sugar, chocolate and a wheat-based wafer), Mars (mostly just chocolate, sugar & flavoring) or Snickers (same, plus peanuts) and similar products under other names can stay good for a very long time.

If there is a thin white or grey-ish coating on your chocolate that is usually not mold or anything bad, it's a “fat bloom” or “sugar bloom” that can happen when chocolate isn't stored perfectly well. Taste-wise though it is usually still okay, and also absolutely edible: As long as it smells and tastes okay, and the texture is not suspicious, you should be fine eating it. The best way to prevent such “bloom” is storing it at not too warm room temperature.

While all the sugar in it is of course not very healthy, chocolate is actually a different beast from pure sugar candy: Especially darker variations of chocolate bars with a high cocoa content contain a surprising amount of nutrients and enjoyed in moderation are good for body and soul.

Side note: As long as you have heat and the right liquid, you can always simply melt a bit of chocolate in some milk (or milk powder + water) or canned coconut milk, and you just made yourself some hot chocolate milk, no additional ingredients needed.

Candy

Candy made mostly or entirely from sugar can have an incredibly long shelf life, depending on the type. Hard candy due to the high sugar content and if no filling is in them that can spoil, are like sugar almost eternal, and even soft candy like gummy bears and licorice can last in their original packing or in airtight containers easily from 1-2 to several years – at worst they get a bit harder over time. The biggest enemy to candy, like most sugary things, is moisture and pests. So once more: Store dry in an airtight container, and if you don't want to see the coloring fade, also dark if long-term storing.

Side note: It is pretty easy to make your own hard candy from caramelized sugar, once you understand a few principles, and get the hang of it. If interested, look up the recipes and give it a try, so that in a pinch you can always make your own candy.

Dry Snacks, Cookies, Crackers

Snacks like potato chips, peanut puffs and other such treats which contain a higher amount of oil: They tend to have a good shelf life as long as the bag remains unopened, in part due to the usually high sodium content. The oil though can go rancid, and thus their shelf life is not as long as e.g. pretzel sticks or tortilla chips, which are basically just baked and dried wheat or corn tortillas sprinkled with a bit of salt: Those can get stale eventually, but otherwise, if stored airtight and away from humidity and pests, can last potentially decades.

A simple type of **snack you can quickly toss together yourself** is using some rusk, crispbread / knäckebröd or otherwise dried bread "chips", and season / dip them depending on your preference with honey, jam, peanut butter, a "fake cheese" dip whipped together from a bit of starch in water or milk, plus nutritional yeast flakes, oil or ghee, and salt or bouillon: Each of these ingredients keeps longer on its own if stored properly in its container, and you can make your quick snacks when you want and need them.

What I said about snacks in general mostly also goes for **cookies & crackers**: If little to no fat is involved in the recipe, and they are very dry and stored dry, airtight and dark, they can last for years, maybe just slowly losing flavor and becoming a bit softer or more crumbly. The more moisture or fat they contain, the faster they will spoil. If you like your cookies as food for your soul, choose at least some that are very dry and thus have a longer shelf life as your "emergency cookies," while the more moist ones remain the faster-rotating ones.

Shelf stable desserts

If you know these types of treats and you love them, these are also a good addition for your pantry, as they do not need refrigeration. For some they are a real comfort food, or they can also be a simple way to make very unhappy children a bit happier (just don't overdo it, all this stuff is very high in sugar and often also other additives, and you might end up with the kid on a sugar high, bouncing off the walls and your nerves, as any experienced (grand)parent, aunt or uncle can tell you. Examples of these are:

- **Jelly Cups** or "Jelly Pots": Usually sealed in small, individual plastic cups, shelf-stable as some type of jello or almost a bit like some cup of very soft version of what gummy bears are made of, they can be a real comfort food for some, while others won't touch the stuff.
- **Gelatinized Fruits**: A bit similar to jelly cups usually coming in small, sealed plastic cups, these fruits or even berries are so heavily processed and mixed with / embedded in something like usually agar agar, carrageen or gelatine that they might still have the shape of the original fruit or not, but you certainly shouldn't expect much nutritional value from them, except maybe some trace minerals.
- **UHT / shelf-stable pudding**: These usually come in tetra packs or sometimes plastic containers, and are similar to the types of vanilla- or chocolate pudding which need refrigeration, but can stay okay without refrigeration for a while. Most do not contain milk (starch + milk-replacement based), and/or have been sufficiently UHT-treated to be shelf-stable, sometimes with extra food additives to that end. Changing the recipe also more or less changes the texture and taste compared to their "keep refrigerated" versions, which some might notice more or less.
- **Nutella & Co.**: Some people love their chocolate or chocolatey-nutty spread on bread, but of course a spoon of that sweet stuff can always also serve not just well for making various baking goods, but also as a sweet treat on its own. It doesn't have an amazing shelf life, but unrefrigerated it usually stays good for at least 2-3 months, sometimes even way more (12+ months), and even after opening it usually doesn't need urgent refrigeration as long as you keep the inside of the jar clean. If it tastes rancid or otherwise strange, toss it of course.

Usually the shelf life of any of these types of desserts can be counted in months, depending on the exact type even more than a year (some even longer). Especially jelly cups can last a long time due to the high sugar content, low active moisture, often also some acidity, and certainly the additional preserving agents. Generally speaking gelatinized fruits have a lower shelf life than jelly cups as a tradeoff for the bit of nutritious value they might still retain. Shelf-stable pudding, especially if it contains dairy products and/or some fat, tends to have the lowest shelf life of the three, but there might be exceptions from this rule of thumb, depending on the exact recipe.

The great variation makes it impossible for me to tell you for sure the signs of spoiling with these types of food items, but usually it's the usual: Mold, signs of rot, obvious contamination, damaged or bloated container, noticeably changed texture, or smelling / tasting "funny" compared to normal, or plain bad.

Of course as long as you have heat, cooling and the ingredients, most of all gelatin or agar agar for real jello, or starch and milk(powder + water) for pudding, you can always make your own, fresh version of these things. Another option for making these are sometimes very cheap, ready-made packages for pudding or jello – mix the content with hot water / milk, stir, maybe need to add sugar (stevia usually works well, too), refrigerate, done.

The Fridge & Freezer

Of course your fridge is part of your overall personal food storage, as is your freezer if you have one. Stock them as you deem fit, but be aware that your fridge and freezer can break down, power outages can happen. Then you are hosed as the food in it spoils, unless you know how to preserve some of it for a while without cooling. So don't count on what is in your fridge and freezer as "emergency preparedness". It is just part of your normal food storage you rotate through over days, weeks, and in the case of the freezer, months or more. If any food is not shelf-stable, if it does not stay good for more than a few days or maybe at best a week or two at room temperature, it is not just not part of your pantry, but also not “emergency preparedness”.

Fridges, properly filled

Many people are not aware that your fridge has different “coldness zones”: It is cooler on the bottom shelf, warmer at the top, and the veggie drawer has, due to its partially enclosed area, its own special cooling environment. Different things react better or worse depending on where you store them. If you want to fill your fridge optimally, read up on where what belongs, and how to best store it, for the list of what-goes-where-and-how is nigh endless. Proper storage can make a difference of days – or in some cases even weeks – in how long things stay not just edible, but at their tastiest and with the best-preserved texture.
Fridges operate most effectively if there is air circulation. So don't pack your fridge too full, or the cooling efficiency will suffer and your electricity bill will be (mildly) less than ideal.
Example: Store your cheese preferably in some kind of wrapping (baking paper works, if you do not have the original wrapping / wax or cheese paper). The lower parts of your fridge tend to be a bit too cold for perfect aroma and preservation, while the vegetable drawer or middle shelf tends to work better. Cheese needs to “breathe”, so once you open a sealed plastic container it came in, don't store it in anything fully airtight for long, while making sure it isn't exposed to too many potential microbes (which is where the classic wrapping in wax or baking or cheese paper comes in). Or: Most raw veggies and mushrooms turn bad faster if kept in plastic bags, and they have a variety of best storage methods, from in paper bags to wrapped in a damp towel. Read up on it, you might be surprised.

Extra Things to store in the Fridge, and what not

Note that there are certain things you might not even think of refrigerating, yet they absolutely can **stay fresh extra long in your fridge**, compared to storing them at room temperature. The following list is not exhaustive, but to give you an idea how things can make a difference – read up yourself depending on what you want to store where of your fresh food stuff:

- You can keep **apples**, **oranges** and **citrus fruits** fresh longer if you place them in the vegetable drawer at the bottom of your fridge. Be aware that apples release ethylene which is a “ripening” gas. So don't store things next to the apples that you don't want to keep ripening. Citrus fruits are not much affected, at worst the peel can age a bit faster – simply store them in separate drawers. If you also want to store veggies in the bottom drawer, store your apples open on the top shelf, so that they are as far away from everything down there as possible, and it should be fine, or at least in separate drawers.

Inform yourself what you might want to store next to your apples, and whether you want to make use of the ripening effect or avoid it. The old granny trick of “wrap apples in old newspaper to keep them fresh longer” works btw: They lose moisture not as fast while they can still “breathe” and if one rots it won’t easily “infect” the others, and you even reduce, a little, how much ethylene floats around them. See more about apples above, as you can store them even in the pantry.

- **Bread** stored on the topmost, warmest shelf of your fridge or in the vegetable drawer can be kept from going moldy. Be aware that most types of bread lose some aroma, moisture, and can get stale faster in the fridge, so test yourself what the climate in the fridge does for different types of bread in different areas of the fridge. Personally, I found that good wholegrain bread and pumpernickel are barely affected within the time you usually use it up, while bread made from fine flour like toast or baguette absolutely goes stale faster. Storing it in a bag (not too airtight if plastic) can also slightly slow down this effect. Either way, storing bread in the fridge might make the difference between your bread getting moldy within a few days max, to staying okay for a week. If you toast or otherwise heat your fridge-stored bread before eating, the negative effects the fridge can have on it can be slightly reduced by doing so.
- **Open bottles of oil** belong in your fridge. It will slow down them going rancid. Make sure nothing comes in contact with the lid / opening of the bottle, that’s usually where the microbes creep in and can make oil go bad faster (true also for most other bottles, tubes and such). You will notice that olive oil in the fridge separates into a firm part on the bottom, and liquid on top – that is not a sign it got bad, that is just a normal reaction to the cold. Simply remove the bottle of olive oil a little while before you use it from the fridge, room temperature will liquefy the solid part at the bottom, and after you shake the bottle you have your perfectly fine olive oil back.
- Pro-tip for your **vegetables**: Things like carrots, parsley root, radishes or celery root stay fresh longer in the veggie-drawer (or even at room temperature) if you wrap them in a clean, slightly damp cloth. Check the cloth(s) from time to time to ensure they stay damp. No need to scrub your veggies beforehand, just rinse them well so they don’t still carry lots of dirt on them.
  Leek and celery stalks also benefit from a damp cloth, and celery stalks you can even put with their cut or lower end into a bit of (frequently changed) water similar to freshly cut flowers, just don't submerge too much of the stalk or it will rot faster.
  You can even store root vegetables like carrots, parsley root, radishes or celery root in water (but not leek), and they will stay fresh longer that way – just replace the water every 1-3 days, and be aware that over time some of their nutrients might get lost into the water, so don’t expect your month-old carrots stored that way to still be as nutritious and aromatic as fresh. This works even with partially cut root veggies.
  The damp towel or even water trick works only with veggies which suffer from losing moisture, while e.g. with broccoli or cauliflower it doesn’t, as they age and wilt differently – they need good ventilation and a slightly humid but not really moist climate. With Zucchini or leafy greens / veggies you can even speed up their rot if you wrap them in a damp cloth. As a few rules of thumb:

    - **Crunchy, crisp veggies** (like most root veggies) like a damp cloth, or even storage in (frequently changed) water. Storage in water only works with veggies that have a very solid texture, don't rot easily, and can actively absorb water (root veggies, or those where only the root end is placed in water, like celery stalks or leek).
    - **Leafy veggie**s or those **with a lot of surface** need decent ventilation and some humidity but not getting damp or wet as they could mold or rot faster (like lettuce or broccoli). At most, put them on, but not in a damp towel.
    - If it has a **smooth, firm skin** and **doesn't go limp fast**, store dry and cool (like bell peppers or zucchini), they can retain their moisture well on their own. Note on **bell peppers**: They can lose a bit of aroma in the fridge over time and don't like it really cold (which can cause them going mushy), but stay fresh longer in the veggie drawer thanks to the not too cold, slightly humid climate, so it's a tradeoff.
    - **If you cut veggies**: If you want to store the remaining vegetable (like celery root or parts of a carrot), cover the cut surface – even just placing it cut-side down on a clean board works – or wrap just the cut area, not the entire vegetable, in a bit of cling wrap (with root veggies placing it in water also works surprisingly well).

  You see: Inform yourself, and once you know you know. It can help if you learn a bit about what different veggies are and do, for example understanding Turgor pressure (relevant for storing them in water), or e.g. that broccoli usually blossoms & wilts rather than rots, or why leek & celery stalks "work like cut flowers".

Note how I barely ever mention plastic: Vegetables are still living cells, and thus they usually need to "breathe" and at least a bit of moisture, but if you wrap them in plastic they can rot faster, with few exceptions. Supermarkets selling that stuff in plastic sometimes makes sense for them, but not for you to store it like that – you will just have to buy more as more rots and needs to be thrown away (the supermarket is happy…). Only root veggies like carrots or parsley root can be stored in plastic bags without much issue , as they lose their own moisture not as fast. Iif packaged too tightly or with no ventilation (few small holes) it increases the chance of rot.

Some things do not belong in the fridge. Examples for this are

- **Onions**, **potatoes** and **garlic** do not belong in your fridge. I explain how to store them above (cool but not cold, dark, dry).
- **Tomatoes** do not store well in the fridge unless you absolutely have to, as they lose aroma fast and change texture in unpleasant ways (they prefer temps around 12-18°C / 54-65°F). If you have very ripe tomatoes you can keep them in the fridge briefly, but let them get back to room temperature again before eating.
  Here's a trick though how you can store them a little bit longer: Place them individually (= good ventilation), away from sun & warmth, not too humid, and with their stem scar facing down. The stem area is where they lose moisture the fastest, and where bacteria are most likely to enter. By placing them stem side down on a clean surface, you are reducing loss of moisture and beginning rot. A windowsill without sun exposure can be a great spot to store them – that's why our grannies stored them in their (north-facing) pantry on the windowsill. The warmer it is, the lower the total net effect of this trick.

If there are green stalks on your tomatoes, leave them unless the stalks are already rotting or molding, then cut them off or remove them, and store the tomato without as long as the tomato itself wasn't affected yet.
Of course if they have any damaged spots, eat them as soon as possible, as they will mold or rot fast and soon. Don't eat tomatoes (or **bell peppers**) showing signs of rot or mold, as the substances released by that process tend to seep through the entire soft, very moist structure they mostly consist of (while e.g. with apples this works differently for rot, see above where I explain them under "Additional Food Supplies").

- **Cucumbers** also don't like the cold of your fridge, as they prefer 10-15°C / 50-59°F. If you can't store them at room temperature in the coolest spot of your home well before they go bad, you can store them in your fridge in a pinch, but in that case choose either the fridge door or the vegetable drawer, where the climate is least bad for them. Wrapping them in a slightly damp (not dripping) towel before storing them in the fridge can help to retain moisture. They are also a prime example of the exception from the rule: Their skin / surface looks similar to zucchini, but contrary to those, cucumbers benefit from being wrapped in a damp, but not too wet towel (too damp & not enough ventilation = faster rot). If you stored cucumbers in the fridge, consume or use them soon after taking them out again, as they will rot faster now. They can also slightly change texture or even aroma from storage in the fridge, and/or get slightly "glassy" spots.

What a freezer does and what not

There is conflicting information about **freezers**, like "stays good in the freezer for X months". Here is my take, after much reading up on it and personal experiences, take it with a grain of salt and do your own reading & thinking if you want to: These statements are mostly about how long maximum nutritional value, texture and flavor can be retained, but they say little about "still okay to eat". Furthermore, many such statements come from the food industry selling said frozen food, leading to a mix of "legally cover our rear ends" and "sell more product by having people toss out perfectly fine frozen goods".
In reality most properly frozen goods basically mean you are hitting the "pause button" on microbial spoiling, which is usually the biggest driver to make food go bad. Chemical processes including oxidation (= rancidity for oil & fat, including in fish & meat) are significantly slowed down – the details depend on the type of food and packaging – and that can, but does not have to, make food taste bad and/or lose nutritional value. Furthermore, if the fat in your frozen food got rancid, you will usually taste and smell that pretty well, or at least "something tastes off". In some cases very light oxidation might not be noticeable, but as long as you don't habitually eat ancient food from your badly maintained freezer, that should not be a problem, just as if your cooking oil is already tipping slightly toward rancidity and you don't notice it yet in the food you prepare with it.
Result: Most food, and yes that includes things like butter or cooking oil, properly stored in the freezer, basically can't go questionably rancid within normal storage time or even over several years, and if properly frozen and oxygen-sealed they could potentially outlive you. Most other frozen food is most likely still perfectly okay to eat even after years, it will just lose some of its nutritional value and its texture and flavor is not as perfect anymore – some more, some less, but eventually they will all suffer from staying frozen for too long.

Example: The myth that "people even ate frozen mammoth" has long been debunked, and meat that has sat in the freezer for years probably won't taste as good anymore and if not perfectly sealed and stored most likely is dry, leathery or otherwise unpleasant to eat, and the fat in it might have gone slightly rancid, but there is a high chance it is still technically okay for consumption. No one who's not starving would willingly eat that, though. A lot will also hinge on how well & fast the meat was frozen, at what temp, how humid / sealed and so forth.
So my advice: Don't count on your freezer as part of your emergency pantry, for power outages can happen, especially if your area gets hit by a hurricane, blizzard, or whatever. Anything in your freezer is a nice extra to have in general, but not for emergency preparedness.
Rotate your freezer content just as you do with your pantry with adapted practices: Your rice, legumes and canned food can stay perfectly fine for many years or even decades (not that they should, and most likely won't, end up sitting that long in a normal pantry – unless forgotten in a rarely checked corner – while your frozen food loses a lot of texture, flavor and nutrition after 6-12 months, and certainly after 1-2 years, but good storage conditions can double or triple that timeframe.

Freezer packing & maintenance

Freezers are the opposite to fridges: **Pack your freezer well for max efficiency**. I will save you the physics behind it (look it up if you want to know why), but your freezer operates most effectively for freezing and for your electricity bill if it is very full, while the more air is in it, the less efficient it is (in terms of power consumption and freezing results).
If in doubt you can even just shove some cool packs extra into it, and remove them when you need the space for something else, that is a common trick to enhance freezer efficiency. Just don't use this trick if you know that in a few days you will remove them for something else, as the energy to freeze them of course is also part of the energy balance involved.

Freezing PET-Bottles: Another good method to enhance freezer efficiency with extra benefits is putting PET-bottles with water or juices in there. They freeze just fine, especially if you first remove around 10% of their liquid (as water expands around 9% when frozen), and they can be part of your normal "preparedness water supplies". If you need extra space in your freezer you can always remove them with no issue, and enjoy some icy water if you like it.
If your fridge fails, or there is a power outage, you can also put these frozen water or juice bottles in there, and they will keep things in your fridge cooler for a little while longer, when every hour, every degree counts. Depending on their size they also work great as "cool packs": Just put those in your cooler instead of those plastic cool pack containers, and upon arrival you have not just still-cool food, drinks or whatever else you stored in the cooler box, but also more or less icy cold water to drink.
Preferably store those bottles laying down, as it leads to a more even freeze and puts less stress on the material, and use bottles that are not super-thin, as they are less likely to suffer problematic material stress from the freezing & thawing. They might slightly change shape from the freezing, but as long as they don't leak that's not a problem.
You can also freeze cooking oil quite well in such PET bottles, as it will keep air away from the oil (source of oxidation = rancidity, even if slowed down in the freezer). As oil does not expand (much) when frozen, you don't need to leave that 10% extra space, just a little bit at the top.

You can also **freeze glass bottles with oil** in it, as long as the glass is not too thin, but it's a bit risky. Just also store them laying flat, and avoid any strain / stress on the material while it freezes. If you want to be extra safe, first cool the glass bottle & oil in the fridge, and after that freeze it. **CAVEAT, DO NOT freeze water or watery substances in glass bottles or cans**, as it can be okay, or lead to a giant mess as the container bursts! Water expands around 9% when freezing. You have to leave enough space in the container and the air needs to be able to get out while the water / liquid expands = no airtight lid. **CAVEAT #2**: Do not freeze any carbonated beverages, any "fizzy drinks", not even in PET. They can expand far more, because you have the water expanding when frozen, plus the carbon dioxide adding stress to the bottle as it can create extra gaseous pressure in the bottle. At best you end up with a fizzy drink that isn't fizzy anymore once thawed, at worst a broken or leaking bottle.

Also remember to **defrost** your freezer from time to time. The more ice builds on its walls, the worse the energy efficiency gets over time. Even just a few millimeters of ice buildup can significantly increase energy consumption, if your freezer is not a "no-frost" type where such buildup is effectively prevented. You also get a better, more even freezing result if there is little to no ice on the walls of your freezer, and it can also prolong the lifetime of your freezer. Think of ice buildup as insulation in the wrong spots.
If there is more than roughly 5-10mm of ice (⅛ to ⅜ of an inch) you can already think about a defrosting, after that definitely. If you don't let too much ice build up that way, the defrosting also is done faster, and you don't have to worry about your frozen goods thawing too fast and too much until you can put them back into the defrosted freezer.
This is also one of the reasons why you should keep your freezer open only for as long as you really need, to avoid more moisture getting in from the air. For the same reason freezing still warm food is not advised: Not only do you use more energy than with food at room temperature, you might also get more moisture to settle on the freezer walls. Making sure the sealant strips are still good and keeping moisture out is another good aspect of freezer maintenance. You can look up online how to tell when sealant strips are probably no longer doing a good job, and how to replace them, it's not that difficult.

The regular defrosting is also a good opportunity to do a **freezer audit** if your freezer is large enough to easily forget food in there. It is easy to just shove more food in rather than rotating the older food to the front/top like you do in your pantry, especially if you store all kinds of different frozen goods in there and don't have lots of different drawers. Once or twice a year defrosting your freezer is the perfect opportunity to take stock of what you actually have in there, and place those things you really should use soon to the front / top.

If you want to be extra-organized, and find yourself too often ending up with too much forgotten food in the freezer, turning your freezer into a food graveyard, do a **freezer inventory**: Have a sheet of paper on which you write all things that go into your freezer, and cross out what you remove from it. Stick that list in a plastic file sleeve against your freezer (like with a magnet), and you can always see at a glance what is in storage, without having to open the freezer. Your yearly or twice-yearly freezer audit (see above) can then also be an audit of that freezer inventory list, in case you or someone else forgot to add or cross out items.

If you want to be extra-efficient, also note down next to each item when you put it into your freezer, thus seeing at a glance if something is really due to be used soon.

Alternatively or additionally, if you catch yourself ever so often buying things you already have in your pantry and/or freezer, you can keep such an inventory on your smartphone. If you are not sure what you still need / already have while at the supermarket, because you forgot to make a shopping list, or as you see something on sale but are not sure how much you have, your smartphone can tell you. As I keep joking: Pen & paper are externalized memory, and so is nowadays our smartphone ;^)

The cube tray trick for frozen food

A typical ice cube contains 15-30ml / 1-2 tablespoons of liquid, or 3-6 teaspoons. You can measure the dimensions of one cube in centimeters and multiply them: the result is the volume in milliliters. One teaspoon is around 5ml, one tablespoon around 15ml. Trays for smaller cubes exist, so you can easily portion even pretty exactly 1 teaspoon per cube. This makes ice cube trays a surprisingly good method to freeze all kinds of things ready-for-use (after thawing), or to just toss them straight into recipes where the heat will thaw them fast anyway.

Water and most watery substances expand upon freezing (usually around 9%), which is why you should not freeze such things in glass bottles with an airtight lid, and leave at least 10% empty space in them. The same is true for ice cube trays, unless you are fine with risking the ice cubes “overflowing” into each other. Oils are an exception from this rule, as they barely contain any water at all – some can even slightly contract upon freezing.

A typical example is buying **cooking oil** in bulk. Usually you can freeze oil like canola, olive or sunflower oil right away in the PET bottle. With glass bottles it is usually also possible, but there is a small risk the glass bottle might stress fracture – so try at your own risk, even though I never had a problem with that so far. If you want to try for the first time with an unknown oil & bottle, you can place a bit of paper towel underneath in case there’s oil spillage. Remember to place the bottles flat and without any strain on them as you freeze them, and maybe first cool them down in the fridge.
More relevant is the ice cube tray trick for types of oils that don’t stay fresh very long, even if refrigerated, like linseed, walnut or wheat germ oil, and of which you usually only need small amounts anyway: Pour the oil into an ice cube tray, and let it freeze thoroughly (no need to refrigerate first, like with bottles). Then remove the ice cubes of your frozen oil and place them neatly stacked into an airtight box with a lid, or a reasonably airtight-sealed freezer bag. This not only frees up your ice cube tray for other uses (after thoroughly cleaning it), it greatly reduces further oxidation even in the freezer, and prevents the oil cubes from taking on smells & tastes (which can easily happen in the freezer). If you find for some reason your oil ice cubes are sticking too much against each other in the container, you can separate them with baking paper. Some oils experience slight phase separation if you freeze them (olive oil is famous for that, even in the fridge), that’s nothing to be worried about. Once you thaw & stir / shake the oil (including after tossing the cube into your cooking pot), it turns back into the normal state.

For larger blocks, you can use **muffin tins / silicone trays** to freeze liquids and pastes or even doughs in ready-to-use chunks. Of course if you use muffin tins, you will have to hold them upside down briefly under running hot water or use a similar method to get the frozen goods out of the metal. That's why I recommend flexible silicone trays like used for muffins, to more easily squeeze the blocks out. You can then store these blocks in an airtight freezer bag, box or jar, ready to be used piece by piece. As silicone muffin trays can be a bit too wiggly to place them neatly into the freezer, simply put them on a sufficiently sized tray or cutting board that won't mind the freezing, and you can easily prepare the silicone tray with the goods to be frozen already sitting on the board, and put them together into the freezer. For really large silicone trays I found baking trays/sheets "borrowed" from your oven quite suitable .
This is great especially for **leftovers** like gravy and other sauces, but even some leftover stews can be frozen that way, and usually 1 block of sauce is just the right amount for a meal, or 2-4 blocks for other leftovers. Sauces frozen like that thaw in no time if you heat them in a pan and are ready for use. This is also convenient to make a larger amount of sauce at once, including when ingredients are on sale, and thus save money and time for the future. They are also a decent size to freeze **scrambled eggs** or even whole eggs (if you don't mess up the yolk) one each (see more below about how to freeze eggs properly).
You can also freeze **self-made smoothies** this way: One or two blocks is usually just the right size if you want to mix it in a typical glass with water, or 2-3 blocks to have pure smoothie. When fruits & berries are on sale, you can easily stock up and make a batch without even needing any bottles taking up freezer space, provided of course you have the freezer space for them. If you want them to thaw faster, fill the tray only halfway or less, to get thinner "smoothie patties".
Again: **If your frozen blocks stick together**, simply separate them neatly stacked in their box, jar or bag with baking paper, which you can reuse over and over as long as it does not get soiled & thawed.

It also works well with other things, like (but not limited to):

- If you want to have (relatively) fresh **eggs** for scrambled eggs, or even separated egg white and yolk ready for use at hand, pour them into the ice cube tray. Especially when a recipe calls for only yolk or eggwhite, you can freeze the other part this way for future recipes that call for it.
  Egg white you can freeze as it is just fine. With **yolk** you have to add a pinch of salt or between ¼ to ½ teaspoon of sugar for each egg yolk and mix it really well, which prevents the yolk from turning jelly-like or even solid when frozen and thawed. Make sure you label which you used for each batch of cubes cube, as sugar and salt make them suitable for different recipes. It won't be 100% like fresh egg, but good enough for most cooking & baking purposes. Don't try freezing eggs with the yolk still intact in the egg white and without the sugar or salt, or you will get a pretty poor result regarding the yolk.
  For **scrambled eggs** you want to freeze (if not simply opting for whole egg powder from your pantry, see above) no added sugar or salt is needed, as it won't turn gluey-solid like pure yolk. Just make sure you whisk them into a homogeneous mass (a few white streaks are okay) and preferably with no air bubbles trapped inside. I prefer to use a fork for this.

If you want to fry such thawed scrambled eggs in the pan, results can vary – depending on how well you scrambled them before freezing, they might turn out a bit "watery", "clumpy", or "rubbery". When frozen scrambled eggs thaw, they look strange, but if you stir them well before use and after their time in the pan, they tend to taste just fine, and they certainly work just fine for cooking & baking.
Frozen eggs tend to stay good 3-6 months that way, after that they slowly degrade in aroma and quality, but can be okay for up to around 1-2 years, especially egg white and scrambled eggs. For thawing, especially yolk, preferably do so in the fridge, as the emulsion will thaw better that way, or at least place a container with your frozen yolk / scrambled egg in a cool water bath, to thaw them as gently as possible. Stir well after thawing to ensure good homogenization.

- Do you have a bit of **wine** at the bottom of your opened bottle which might not get drunk before it could go bad? Is it a good type for cooking? Pour it into the ice cube tray, and you have ready-to-use wine for your cooking when a recipe calls for it. As my mom liked to joke, “I love cooking with wine, sometimes I even put it in the food” ;^)
- The same as with wine goes for **milk**: If you have a bit of leftover milk you don’t feel like drinking, and might go bad soon, freeze it like this and you have pre-measured milk for your coffee or tea, and for cooking. Note that milk when frozen slightly changes texture, so it won’t be that great for drinking anymore, but certainly for other uses.
- You can also freeze **cream, crème fraîche** or **fresh cheese** (which can work as a replacement for crème fraîche, with a little water) in ice cubes or muffin trays. It will slightly change in texture, but for cooking it is still perfectly fine. I wouldn’t freeze any of those though if you want to use them for cold-prepared meals, or you will have to stir a lot and still probably accept some texture changes.
- **Fresh herbs** can also be frozen as they are, but depending on your freezer conditions they can lose aroma, texture, get soggy, or all three. If you chop them up as you would use them next, and then stash them tightly with a bit of water or oil in an ice cube tray, that issue might be solved, and you also have your well-measured amounts of fresh herbs at hand with already also the oil or a bit of water for your cooking. Oil is especially good for this: it protects the herbs from freezer burn and keeps their cell structure better intact than water does, since water expands upon freezing.
- Any other kind of **pastes & sauces** can also be frozen that way, ready for use in future cooking in pre-portioned sizes. This goes from your typical pesto to the leftover from a can of tomato paste, or that oily sauce your can of tuna or other fish came in, which might be great for future cooking, that half cup of unused cream, or any leftover sauces from your cooking (probably better for the muffin tray).
- You can even make your own **frozen, self-made bouillon cubes** that way by thoroughly boiling leftover bones with bits of meat still on them down into your own bouillon. If you don’t know how to do that, you can find recipes for it, mostly using just leftovers from your cooking. Good self-made bouillon from bones & bits (often with some onions and veggies, salt, and a bit of pepper), if done right, tastes way, way better than most store-bought versions, and can be thick like jelly at room temperature depending on what you used, while being intensely aromatic, so little is needed – really a bouillon cube.

- Even **Beurre manié** (1:1 paste of butter & flour as a thickener for sauces) can be frozen into cubes perfectly sized for your sauces. Freezing beurre manié has the added benefit of melting more slowly in your sauce than freshly made, leading to a more even result, and less chance of lumps forming while you stir, until you get your smooth, even sauce, similar to using a "light" Roux (*blanc* or *blond*). And you can more easily add a bit more if the sauce isn't thick enough – with roux, you've got what you've got. Of course you don't get the aromatic flavor like with dark roux (*brun*) from beurre manié. You can also pre-make and freeze **sautéd mirepoix paste** paste as cubes: If you slowly sauté a bit of onions and maybe a bit of carrots and celery root (or classic Mirepoix / Soffritto) for good caramelization and Maillard reaction, and then purée them (for small amounts, just press through a sieve), you can get not the same but a similar aroma as with dark roux, yet with greater flexibility as you make your sauces.
- **Lemon juice**, freshly squeezed, is an amazing ingredient that can work as a flavor enhancer in many meals (if you can taste the sourness, you most likely used too much). A full lemon – several even more so – is more than you'd ever need in most cases, and it spoils fast. Use the ice cube tray trick, and you have ready-to-use fresh lemon juice at hand when you need it. I recommend using a tray with smaller sizes for the cubes, as a full normal sized ice cube might be a bit too big. Otherwise you can just fill the normal ice cubes into a freezer bag, wrap it in a kitchen towel, and gently (!) apply a hammer to get tiny ice splinters of lemon juice, which you can easily refreeze and then easily dose by scooping with a spoon straight from the bag.
- **Garlic & onions** are of course best fresh, and have a decent shelf life if stored properly (see above). But if it's on sale and you want to stock up, you can absolutely purée your garlic or onions, or chop them into small pieces, and then freeze them into little cubes, to have them handy when needed. The same "hammer trick" as with the lemon juice (see above) can also be used of course to break those onion cubes up and store them in the freezer bag afterward, while in my experience, puréed garlic is too resistant to this method – YMMV. You can also freeze garlic cloves and use a fine grater on the frozen pieces.

Further Freezer tricks

Grater trick: Many people are not aware of a simple trick to portion off chips or strips from frozen blocks of food: A simple grater, like you use for cheese and other food items.
Especially for **butter** this trick can come in handy: Butter lasts many years in the freezer if stored well, but anyone who tried to portion off just a bit of frozen butter for cooking or baking knows what a fight that can be. If you freeze the butter in the wrapping it comes in, you can just open the wrapping on one side of the block of butter to have a "handle" on the rest, and with the coarse side of your cheese grater you can grate off well-portioned amounts of butter, which also will thaw faster thanks to being in smaller strips or ribbons.
This of course also works with frozen blocks of cheese, but is a bit more work than with butter.
Garlic cloves or stalks of **ginger** you can freeze as they are (peel the ginger first, unless you prefer to grate the peel off while frozen), and grate them perfectly well from frozen, to exactly the amount you need, usually with a more fine grater. It gives you garlic or ginger tasting like fresh, and lasting many months in the freezer.

If you are worried about nicking your hands, hold the frozen goods with an old kitchen towel.

If you want to **freeze bread**, many know that **slicing** it before freezing is helpful to just have a few slices ready when you need them, rather than having to thaw the entire loaf. Those slices sometimes stick to each other, making it harder to remove just 1-2 slices from the bag. You can prevent this by **placing baking paper** between the slices, of course cut to size. These properly sized sheets of baking paper can be reused as long as you keep them clean in the fridge as your “slice separators”. You can even put the frozen slices right away in the toaster if you like them toasted, it will just need a little bit longer to thaw in the toaster. The same trick works also with most other sliced goods you want to freeze and keep separate, including slices of cheese.

Grated cheese tends to have a shorter shelf life in the fridge than blocks of cheese. It freezes very well though either way. What often happens with grated cheese is the individual flakes or ribbons of cheese stick to each other due to moisture in the freezer bag. To prevent this, take the bag out every hour or two (depending on your freezer) and give it a good shake. This will prevent them from sticking to each other, and you can later take them easily from the bag in the amount you need.
Cheese might change its texture a bit from freezing (depending on the type of cheese), but for cooking and baking it is still perfectly suitable. This is also a good way to rescue chunks of cheese that have gotten a bit too dry to enjoy fresh: Simply grate it, freeze it, and you have good cheese for future cooking.
This trick of “**shaken freezing**” of course works also with any other kind of food coming in flakes or other small pieces, like **pre-chopped onions**. This works also really well with **breadcrumbs** you can make yourself from bread that got a bit too dry for your taste, crusts you don’t like and other dry leftover bread. Just crumble it or cut it to size for croutons, roast/dry some more if needed (or fry), then freeze in a bag, shaking it from time to time. You just made breadcrumbs or croutons for free. In my experience these are also more aromatic than the store-bought ones.

Fresh garlic paste can be made ready-to-use by squeezing it through a garlic press directly into a freezer bag. Don’t put too much into the bag, as you then want to lay the bag flat on a freezer-safe tray or cutting board, and spread the garlic paste really thin. You end up with a flat, thin sheet of garlic paste you shove into your freezer with the tray/ board. When the garlic is fully frozen, you can remove the tray or board. In the freezer bag you now have a thin plate of frozen garlic paste you can easily snap or twist off pieces before resealing the bag.
This works well also with any other kind of paste, of course. The alternative is using the ice cube tray trick, but for many such pastes a normal sized ice cube is probably too much, so you would need one that makes really small ice cubes, or only freeze thin layers on the bottom of the tray.

Btw, the above “**flat freezing**” method, even if slightly thicker, is also good to have things thaw faster. The same amount of frozen goods, if stored in a solid block or round bag, takes longer to thaw than if you freeze it as a flat “patty” or rectangle/square. The thinner these flat bags of frozen goods, the faster they thaw, be it minced meat, mashed veggies or that leftover rice you froze a while ago. On top of that, flat-frozen bags stack more neatly in the freezer, saving space. You can even portion out ready-made dough that way.

Non-stick freezing, besides the above method in a bag like with grated cheese, or via separation of slices by baking paper, can be done by freezing individual chunks or bits spread out on a tray, usually also with baking paper underneath. Once all are frozen sufficiently you can store them in a freezer bag/box you can remove from as you need, be it berries, small chunks of dough for buns, cookie dough rolls, or even baked cookies provided they freeze well.

Anyone who tried knows that **bananas** get brown in the freezer, and also mushy. What many don't know: if you peel them first and maybe portion them ready for use, frozen bananas can actually work better for many baking recipes, as freezing breaks down the cell walls, and makes them a bit sweeter and easier to mash. In some recipes you can even replace eggs with overripe bananas – roughly 1 banana per egg – as bananas can act a bit similarly to eggs, depending on the exact recipe. Keep in mind they add a bit more volume and moisture to the recipe, so adapt accordingly. Especially overripe bananas you might not want to eat anymore can be frozen that way, and in the future used for baking, making smoothies, or otherwise as a sweetener. They tend to last 6 months or more in the freezer that way before their flavor degrades, provided you store them in an airtight bag / container.

Rice can also be frozen well, if you keep a few things in mind: Let it steam off and cool down fast – ideally within an hour, in the fridge if needed. I tend to let it cool down and steam off a bit at room temperature, and once it stops visibly steaming I place it on a tray in the fridge, covered with a paper towel (which can be reused for other things later), so it cools down fast. It should be cooled down and still a bit moist, but not soggy, when you portion it into freezer bags or boxes. Best is the above “flat freezing” shape to speed up the freezing (and future thawing). Remove as much air from the bag as possible to avoid freezer burn. Rice turns dry in the freezer if it's frozen too slowly or with too much air contact. If it is too moist, it can turn into a mushy lump. That’s why you want to freeze it at the right moisture level, with little to no air in the bag, and as fast as possible for best quality.
For thawing, either do it slowly in the fridge in the bag then gently reheat with a splash of water if the rice turned out a bit dry, or tip the rice straight from the bag, still frozen, into a pan or pot with a lid, add a splash of water, and thaw and reheat it on the stove over low heat, or in the microwave for two minutes.
You can store your leftover boiled rice (and many other grains, for that matter), or even make a larger amount and freeze some extra for the future this way, without the usual worries about reheated leftover rice (rice is more prone than most food to go bad fast after cooking, most of all due to Bacillus cereus). If you freeze this rice in muffin trays (see above) or other containers of the right size, you can even get rice "patties" or squares just the right size for one portion.

Saving time & money with large-portion cooking: If you don’t feel like cooking most days, just cook one to three different meals once a weekend, preferably with ingredients that were on sale and/or you got cheaper in bulk. Then – if you don't home-can them – enjoy your weekend meal and shove the rest into the freezer. If you do this with a variety of different meals changing every week, you also end up with a great variety of meals that sit in your freezer over those weeks as you eat a bit of this, a bit of that each week.

You save not just on ingredients, but also on energy (boiling a large pot takes less energy than boiling the same amount in several smaller pots over time), and on time, as you might spend more time on that one cooking session, but less than you would combined if you cooked every day, or even worse, spend a lot of money (even if not time) on ready-to-eat meals, takeout, and other food others made for you.

A note on saving money via freezing "yellow sticker" items: Besides buying bulk / on sale during season and freezing, there is another thing many people don't even think of:
Supermarkets often offer all kinds of things at massively reduced prices when they are close to their use-by / best-before date, from ready-to-eat fresh meals to meat, dairy products, and canned goods. They can often be found in a dedicated section of an aisle, and they are marked specifically, often with yellow stickers to indicate them as on sale due to being close to their use-by or best-before date.
If you go to a supermarket soon before they close, you can often grab all kinds of food items for a fraction of the normal price. They are still perfectly fine if you consume them soon(ish) after purchase, and things with use-by date, like fish and meat or also some but not all dairy products you can freeze just fine at least for some future uses. With other food items it depends on the ingredients, if in doubt, look it up as you build your knowledge of food & cooking. You can save a good chunk of money this way over the months and years by going for items with a short remaining use-by or best-before date, and just use it up or shove it into your freezer for later.

Frozen Smoothies and fruits & berries

Fruits are of course usually best fresh, but what if you see your favorite fruits on sale, or the trees or hedges in your backyard are throwing them at you by the bucketful, and there are only so many jars of applesauce or jam you want to make? Most fruits freeze poorly on their own, and the ice cube tray or muffin tray trick (see above) might be a bit too small for your purpose. Here is another way of repurposing something for this: Glass bottles – preferably with a slightly wider opening – or thoroughly cleaned and aired jars with a twist-off lid, as you might have sitting around from store-bought veggies or fruit, can be perfect storage containers for freezing homemade smoothies.
A simple smoothie maker can be had for as little as 30–50 bucks; if you want something better, a hundred at most. Use those old glass jars or bottles for free. Over time you can buy fruits and berries when they are cheap on sale, turn them into smoothies and shove them into your freezer (if you have the space for it, of course).
Caveat: Make sure not to seal the lid too tightly, nor to fill the glass container too full: The smoothie will expand a bit (5-9%) when freezing, and at worst could crack or break the glass bottle or jar if you fill it too much and screw the lid on too tightly. If anything, just rest the lid lightly on the bottle or jar, and screw it shut only after the smoothie is fully frozen. When you thaw it, again open the lid beforehand, or you'll end up with a vacuum seal that's hard to open – or at worst a glass jar or bottle that cracks as it thaws.
A great choice for freezing smoothies are glass bottles with a reusable plastic lid that is not 100% but reasonably airtight, and doesn't need to be screwed on. In some countries, yoghurt and other refrigerated foods are sold in such bottles, usually at half a liter (about 2 cups) in volume, perfect to freeze some smoothie after you enjoyed the yoghurt.

The investment in a smoothie maker will soon enough become a money saver if you enjoy fresh fruits and berries (even more so if you grow some in your backyard), as you can enjoy tasty fruits and berries year round, bought when they were on sale and in season, turned into smoothies with minimal loss of nutritional value (apart from some fiber structure being broken up). Keep in mind that after a year or so, some vitamins – most of all vitamin C – will start to degrade, so use them up before the next season comes around. For thawing I recommend your fridge, just leaving it there overnight is usually enough – maybe with a paper towel, cloth, or small bowl underneath in case of condensation.

If the fridge / freezer fails

What do you do though if your fridge / freezer fails? There are some types of food you can make last a little while longer, the following is again not an exhaustive list, just to give you some ideas of what is possible, for more, look up the specific types of food you have in your fridge if you're interested:

- **Bread**, if sliced and not consumed before it goes moldy at room temperature, can be spread out in a well-ventilated area, covered against insects if needed – ideally in the sun if possible. Turn it over with clean hands from time to time, and you might save your bread by turning it into dried bread with a long shelf life still good to add to soups and the like. If it's not a "power is down" situation / your oven still works or you have a BBQ grill (and plenty of fuel for it), you can also lay it out on the grill to slowly dry-roast it or in your oven. With the latter prop the oven door open slightly with a heat-resistant cooking spoon, spatula, or similar, so that the moisture can escape, and slowly dry the slices at low heat (50-70°C / 120-160°F or so tends to work well for me), you can also try a bit higher, but not way beyond that or you get charred bread). Basically you are making your own rusk that way – it doesn't have to be white bread. Depending on energy costs in your area though the energy consumption for this might not be worth it, but if you use the residual heat of your oven after baking something in it anyway, it might be more worth it to create your "home made rusk" that way on purpose, or if you save a bit on your heating bill in winter while you do. Again, YMMV.
- **Milk**, if already opened, can last a bit longer if you add around ½ teaspoon of salt per quart (liter), but don't count on it lasting long without a cool spot to store it.
- **Soft and fresh cheese** will spoil pretty fast if unrefrigerated, but adding a bit of salt can help to buy you a little bit of time. Otherwise same as with **yoghurt** and other fresh dairy products: Try to store it in the coolest room, close to the ground where it tends to be a bit cooler, in an unopened package (eat soon if already opened and still okay).
    - Note that (plain) yoghurt, still unopened in its container, can stay good for weeks or more in the fridge: If the lid is okay and not bloated, trust your eyes, nose and tastebuds. You will almost always note if yoghurt has gone bad, like tasting bitter, unusually sour, rancid, or just off. Unpasteurized yoghurt can even keep fermenting in its container, and beyond the best-before date it might change texture and flavor in pleasant ways, depending on the exact yoghurt. I certainly prefer my organic, unpasteurized yoghurt when it is close to or a few weeks over the best-before date more than the cups freshly bought, as it gets more creamy, thick and aromatic! YMMV.

- **Firm cheese** like gouda or cheddar, if completely immersed in clean (!) olive oil (or in a pinch, another oil like rapeseed), can in theory stay fresh a bit longer, but I strongly, and I mean strongly advise against this, as you run the risk of botulism if bacteria or spores of Clostridium botulinum get in there with the cheese.
  A better and safer way to store firm cheese for a while is to wrap it in a clean cloth soaked in salt water or vinegar, damp but not dripping, then store the wrapped cheese in a clean, dark, cool spot away from pests. Even close to the ground, where it tends to be at least 1–2 degrees cooler than on a shelf can help – every degree counts against microbes or mold growth. You can set it in a bowl to catch any drips, and cover the bowl with a kitchen towel. Depending on the weather, other conditions, and the type of cheese, it can stay okay for anything from a couple of days to several weeks – that's how things were commonly done in pre-fridge days.
  For just a few days, keeping firm cheese in a container that isn't fully airtight - but keeps pests and most of the air out – can be helpful, or at least wrap it in baking paper, wax paper, or wax cloth. Eventually it will at best just age a little (unlikely), or start drying out (likely), or start growing mold (likely) – which you can cut away to about an inch (2–3 cm) around the affected area and still enjoy the rest.
  Don't store your cheese in cling wrap or airtight containers: you're creating exactly the conditions mold loves, while "suffocating" your cheese, and the results are not pretty after a while. If you have pre-sliced cheese that came in plastic trays with a thin plastic sheet on top, you can keep it in that packaging as long as there is a little airflow remaining between the peeled-back plastic sheet and the tray, just use it up soon and store it as cool, dark and away from pests as possible.
- **Butter** can be stored well at room temperature with the method of the "french butter dish" or "butter bell" aka "butter keeper / crock", which can keep it okay for 1-4 weeks at cool room temperatures. The principle is simple: Butter needs to be kept free of contaminants, and airtight to reduce oxidation. Many a fancy butter dish won't keep air from the butter, while the butter bell does. If you don't have such, any reasonably airtight container (like a canning jar) can do in a pinch – the less air in it, the better.
  Alternatively, you can place the butter in its wrapping inside a watertight plastic bag, sealed as well as possible with as much air removed as you can manage, and then store it in a bowl of water that you change from time to time. In theory you can even submerge the butter completely in water like this, preferably still in its wrapping. Just dry it well before putting it back into the new or repaired fridge or freezer. If you use the water method to reduce oxidation (= rancidity), you have to make sure the water doesn't stagnate and go bad over time, and in general work cleanly. I recommend a bowl of water, changing it every 1-3 days and covering it with a plate to keep out (further) contamination from above.
- **Eggs**, as I mentioned, can be stored at room temperature for a while if unwashed. Otherwise or in general you can salvage your eggs if your fridge goes down by turning them into hard-boiled eggs, and then into pickled eggs. Stored in water mixed with salt and vinegar, they keep well enough for around 3–5 days at about 20-25°C / 68-77°F, beyond that, it gets riskier with each passing day. You have to ensure the solution is sufficiently acidic (pH < 4.6) to avoid any botulism risk, though.

There are so many different recipes for pickled eggs I'll have to refer you to looking those up online if you want to know various options, but they can be quite delicious, and in the fridge you can store pickled eggs for several weeks like that if properly acidic.
A very simple, classic recipe involves 1 liter of water (about 4¼ cups), 50 g salt (5% brine), 150 ml vinegar at 5% acidity (⅔ cup or about 10 tablespoons) and seasoning to taste, e.g. 1 teaspoon of black peppercorn and mustard seeds each, 2–3 bay (laurel) leaves, and 1 small onion cut into thin rings (sour-tasty later on bread). Some also add 1-2 cloves of garlic, some soy sauce, and/or ½ teaspoon of sugar for balancing the flavor. Hard-boil the eggs, peel them. Bring the water, salt, and spices to a boil, then let them simmer for 5–10 minutes over low heat. Then pour the entire mixture into a clean (ideally pre-pasteurized) jar, add the vinegar (I prefer apple cider vinegar) and place the eggs into it, making sure all eggs are fully submerged (the above amount is usually enough for about 10 eggs). Close the jar with its lid. For best taste let the eggs soak for 2-5 days, and of course only remove eggs with clean utensils to avoid contamination. In the fridge such pickled eggs can stay good for 2-4 weeks, but I've never experienced them lasting that long, given how tasty they are ;^)
If you increase the amount of salt and vinegar (80-100g salt and 200–250 ml vinegar at 5% acidity), and don’t add much if any spices & herbs, just a teaspoon of sugar to balance the acidity, pickled eggs like this can even stay okay for up to a week at room temperature, or even a day or two longer if you're lucky, and in the fridge 4-6 weeks. They are really pretty salty and sour then, and more firm. This turns them more into “preserved food” than a delicious snack / food. You can replace roughly 10–20 g of salt with around 200 ml of soy sauce (not low-sodium!) for a bit more flavor.

- **For anything that needs to be kept a bit cooler**, not just your cups of yoghurt, fresh cheese or other such things, a simple method can be: Place them in a container of cold water – just make sure none of it seeps into the food packaging. Place the container with water (can be a bucket, bowl, whatever) on the ground. The water will evaporate slowly, and together with the slightly cooler temperatures at ground level, will keep the contents a bit cooler than if you stored them on the counter or a shelf. It’s not a lot, but every bit can help. Replace the water often enough – you don't want algae or worse growing in there. Alternatively, you can wrap damp towels around the (sealed!) packages and keep them damp.
  The evaporation involved with this method will slightly cool the content. Don't expect amazing results: in moderate climates (temperature and humidity) you can usually get around 1-3°C less, but that can be enough to keep many dairy products okay for a day or two longer – which is better than nothing.
  In very hot and dry climates (think North Africa or the arid regions of the American Southwest) you can even get up to 10°C / 18°F below ambient temperature with perfectly optimized methods, as the indigenous peoples of those regions developed. These usually involve specially made, unglazed ceramic vessels, often with a double wall between which water is stored, so it can evaporate through the ceramic while the inner container and its lid keep the food – or even just drinking water – cooler. Don't expect such effects from your DIY damp cloth or water bowl method – and certainly not in more humid or less hot climates.

Consumables & Household Items

You never know how much you need your common household items until you run out of them, or wince at sudden sharper price increases. The following list is not exhaustive, you might have your own things you use a lot of, and that have a near-infinite shelf life (if in the unopened container, in some cases).

The principle to keep a good storage system with these household items, including for general preparedness, but also to never run out of any, is similar to a pantry but easier: Always rotate: use what you buy and buy what you use. As most of these items are either “good until it breaks” or consumables which have a shelf life so long it does not really matter for storage purposes, it all becomes even easier, of course.

Also a word on “a gazillion different products.” You can do that if you want to and have the storage space for it. Honestly though it is not needed. Even just water, vinegar, baking soda (and if gone old turned into washing soda), and dissolved slivers of bar soap can in theory clean most things (almost) just as well, and if properly used can be more hygienic than many of the tons of different “special cleaning products” sold by the industry, who love for you to buy as much as possible. Vinegar and vinegar essence have also been shown in scientific studies to kill the vast majority of common household pathogens, if used properly, while improper use of even the best "modern" disinfectants won't get you better results either.
Learn a bit about what simple, basic cleaning methods and agents do and how to use them, like vinegar (essence), water, bar soap, or any other basic household cleaner (if you prefer liquid form), and you will be surprised how little you really need. Most who do this end up with maybe half a dozen to a dozen different cleaning products in total they use regularly, and everything else is rarely needed or used, if at all – or just for preference / the fun of it.

To give you an idea, my “standard cleaning basket” just contains: 1) **bar soap**, 2) **vinegar essence**, 3) **baking soda** (and I don’t really do much baking!), 4) **salt** (besides for food, of course), 5) **isopropyl alcohol**, which together with vinegar and salt already cover 80–90% of all hygiene situations, plus for convenience 6) a liquid **universal household cleaner**.
Technically, under normal circumstances I don't even need the 7) **drain cleaner** (unless something is incredibly stubborn), 8) **laundry detergent** (just easier/nicer than the alternative with above materials), 9) **liquid hand soap** (instead of bar soap – I just like the scent and feel of it), 10) **liquid dish soap** (doubling as a second liquid hand soap, and used instead of bar soap and vinegar), and only rarely need or really more effective and then glad to have also at hand the 11) **denture cleanser tabs**, 12) **curd soap**, 13) **white spirits**, 14) a bit of **beeswax**, 15) a bit of **sand**.
It’s just nice having these additional things around for convenience or “rarely used but really even more effective than the alternatives in certain situations”.
On the other hand I haven’t had **bleach** or **hydrogen peroxide** for a good while anymore (which you find other people loving or recommending), as I realized how rarely I need it – my emergency preparedness is covered through other things, and the hydrogen peroxide is partially covered by the denture cleansers.

YMMV, maybe you prefer and use bleach more commonly as a disinfectant (among other possible things) than I do with isopropyl alcohol, which suits my needs better – because I clean electronics more often than someone who's mainly glad bleach doubles as a water treatment option, but rarely needs to clean electronics, where isopropyl is really the better or only safe choice. For each of us simply the other's choice makes less sense.
This illustrates how there is no "one fits all" approach, not by what we actually do and need, nor by what we like. And since for most of us it's not a fun chore to begin with, why make it more unpleasant than you have to?
Whatever works best for you is fine, this is not about being as spartan as possible, it is about being efficient with running your household, storage space as you have it, and of course money, while at the same time finding it most fun or at least most convenient, rather than denying yourself what you prefer if you have options. Options are good – throwing extra money at an industry that tries to sell you the same basic stuff with minimal real differences beyond packaging and marketing, on the other hand, isn't.

And btw as an example for this more laid back approach,for exactly these reasons you'll also find in my "cleaning basket" the 16) **specialized limescale cleaner** and 17) **toilet cleaner** which I mostly just keep around because the person doing the bathroom cleaning prefers those and is neither used to nor wants to use the other, equally good methods.
And that's fine, just as I prefer my liquid hand soap and dish soap over a bar of soap next to the sink and a dispenser of diluted vinegar essence. In theory I could easily make my own mix of vinegar essence, water, and whatever scent I prefer from one of my essential oils, and between a cheap piece of bar soap and this, it might even be more hygienic than store-bought liquid hand soap. Note: Soap is alkaline, vinegar is acidic. The hygienic, disinfecting properties of vinegar come from its acidity. If you mix soap and vinegar, they (partially) neutralize each other, and you end up with less effect from both. That's why keeping the two separate makes more sense – even though in theory you could make your own liquid hand soap from bar soap shavings dissolved in hot water.
So if one of your family members prefers using a different substance or method, as long as it gets the job done and doesn't stray into needlessly wasteful or problematic territory (money-wise, storage-wise, or health-wise), let them, just as they let you with your preferences.

For matters of preparedness, knowing which cleaning methods are needed and where, which disinfecting methods really work well, how little in different substances you really need, and how you can replace your usual products with other, sufficient methods using what you have at hand, can come in handy when the chips are down and your favorite hand soap or dish soap isn't available and you are running low on yours. That's also why having enough spares of the things that handle most situations just fine is more important than stocking up on all the "extras" you only prefer under normal circumstances.

Btw, a little tip for those who don't know it, and this can be really convenient plus save you money: **Most dish soap can also double as hand soap**. If you get a big bottle (if cheaper that way), you can refill your existing soap dispensers, and have one next to your kitchen sink, the other in the bathroom. No more messing around with a bottle of dish soap – just use the dispenser, including for a quick hand wash in the kitchen.

Note also that **most dish soap is incredibly concentrated** even if not labeled as such, and most people use utterly too much. If you want to try it, and certainly if it doubles as your hand soap in the kitchen, mix it with water in that dispenser. Depending on how concentrated it is you will probably be fine with anything between 1 part dish soap 4 parts water to 1:1, with truly concentrated dish soap you might need even less, down to just 1 part soap to 10 parts water. It will also reduce how much you actually use quite a bit over time, without making any difference to how clean your dishes or hands get. Most people utterly "overdose" when using dish soap straight from the bottle.

The rotation principle FIFO (First In First Out)

Here is a rule of thumb: Always have at least one of each bottle, container, or whatever you currently use as a household consumable, and a second one stored away. When the one in use is empty, you grab the one from storage, and add that item to your shopping list, to restock next time you go shopping. That way you'll never experience the unpleasant realization of running out of shampoo in the shower, or having no drain cleaner (if not using baking soda + vinegar, see above under vinegar) when your drain really needs it.
If you have the storage space and things are cheaper in bulk, of course you can also get yourself 3+ containers of such goodies, and that way you are good for a longer time and save money.

This is a sensible way of keeping supplies simply to save you hassle and scrambling in the long run, as well as some money if you buy things in multipacks of two or more when they're cheaper (and don't go bad, and you have the storage space).

Doing this has the added benefit during emergency situations that you don’t have to scramble and don’t run out when you (fear you) can’t get more easily. Others rush to the supermarkets before a bad weather warning, you just sit at home, drink tea, keep an eye on the warning channels, and after battening down the hatches, go on with your life as normal.

Also: Do not underestimate how much a good stash of cleaning supplies, hygiene products and so forth make not just a difference to cleanliness and thus health outcomes for you and your family, but also for how you feel while the world around you is in chaos.
Cleaning and hygiene products can play a major role in your emergency preparedness for situations you hopefully never have to experience, not even the "minor" ones – but if you do, you'll most likely be glad for it.
People have joked about folks cleaning their home or mowing their lawn while serious chaos was still unfolding after natural disasters. Sometimes that joking or even facepalming is justified, but sometimes very misplaced and born from misunderstanding what works and how during such situations: By doing these “normal” things and trying to maintain some semblance of a "normal" routine and life, even and especially during a crisis (adapted sensibly to the situation), you help yourself stay more stable, keep your mind off worrying, and all the while maintain yourself and your home as well as the situation allows for and makes sense.

For **reusable things** like scrub brushes, microfiber cleaning cloths and good mopheads, you can use these in theory for many many years as long as you can properly clean / disinfect them from time to time. Especially with scrub brushes (or dish brushes), opt for those that have handles which can withstand a good dousing in vinegar (or bleach or alcohol, whatever your preferred disinfectant), and/or boiling in water. There are also by now brushes made out of silicone which can be pretty darn amazing, and with the right handle, border on indestructible under normal use.

Not everyone's cup of tea is reusing **old toothbrushes**. If they are made out of the right material, you can absolutely boil them in some water/vinegar mix and/or disinfect them, and they can have a second life for cleaning those small, hard-to-reach spots, including for bottles with a narrow opening, as long as the bottle isn't too deep for the toothbrush to reach the bottom. If you don't like the thought of reusing those old toothbrushes, you can simply dedicate one of your spares to it if and when you need to clean such small, hard-to-reach spots. YMMV.

For those concerned about **hygiene and germs**: Yes, good hygiene is very important, but don't overdo it unless you have a medical condition requiring it. Research has shown that people who live too hygienically, constantly disinfecting everything, have higher rates of allergies and often worse health outcomes when they get sick. This is most likely due to our immune system needing at least a little to do every day. If you disinfect the hell out of everything, this might impact your health and immune system long-term in different but equally negative ways as poor hygiene habits.
Furthermore, when it comes to good hygiene habits, or simply when you don't have what would be best for the situation at hand: Don't think you have to be perfect, you just have to be good enough given the circumstances. This is especially true in emergency situations, of course. So if you have no medical-grade antiseptic, vinegar is still better than nothing as a disinfectant. And if you have a truly dirty wound and absolutely nothing but tap water to clean it, that is still better than letting the dirt and all that's in it sit there until it festers.
These principles apply to basically everything when it comes to cleaning and hygienic habits: Do what makes sense, do what you can, but don't overdo it either, and accept that life comes with health risks including inevitable death, and perfectionism is the enemy of good enough.

About personal hygiene during a crisis: People who have never experienced it have no idea how much of a difference it makes to your spirits whether you can feel reasonably clean or not. This can be more relevant than you might think during times of crisis or otherwise high stress – not directly to "save" you, but to keep you functioning better. Plus, a minimum of hygiene is of course also pretty important for your health.
So for matters of "emergency preparedness", maybe consider storing enough water not just for drinking and cooking, but also for personal hygiene, or having something like dry shampoo and no-rinse body wash (look it up if you don't know how it works) in your supplies, as well as a good way to wash your hands without water, and makes them safe again to handle food. In a pinch, vinegar and salt on a paper towel can usually do the trick, unless it's some specific kind of stubborn stuff you've got on your hands. An example is tar, which is usually removed with some grease such as butter, ghee, or cooking oil, and then washed thoroughly with water and soap. Don't skimp on the rinsing in that case if you can at all help it.

The memory aid list

Personally I prefer to check once a year or so my “little stockpile” against my personal list, so that in case I forgot to buy a replacement for the 2nd bottle / box I do not experience that kind of “oops, out of it” moment. You might deem that superfluous for your own routine, I found it useful.

My personal list, yours might vary, looks as follows, with the neat spare containers stashed away in an area where the storage boxes are not in the way of daily life, but easily at hand for replacements. My personal list in a plastic file sleeve sits in there together with those containers as a memory aid, to check yearly or twice a year against the contents.

Note that quite a few of these things serve more than one purpose, as I mentioned some of them already elsewhere, from aluminum foil used with salt to clean pure silver to cling wrap as part of a fruit fly trap, or baking paper to wrap cheese. Others I might mention later.

A typical memory aid list can look like this, change it to fit your own preferences:

- Baking paper / Parchment paper
- Wax paper (if you use it)
- Aluminum foil
- Cling wrap / plastic food wrap
- Freezer bags
- Food storage bags (“Ziploc”)
- Trash bags (of the sizes in use)
- Universal Household cleaner *
- Dish Soap / Detergent *
- Laundry detergent *
- Drain cleaner
- Vinegar essence (see above why)
- Salt (see above why)
- Bar Soap (can replace * on this list!)
- Petroleum jelly (has many uses!)
- Hand Soap *
- Shampoo * &
- Bodywash *
- Toothpaste & spare Toothbrush
- Dental Floss
- Mouthwash (if you use it)
- Deodorant
- Spare toilet brush (or more)
- Spare scrub brush (or more)
- Spare mophead
- Package(s) of cleaning sponges
- Microfiber cloths (enough to rotate through the washer with spares)
- Balls of (cleaning) steel wool
- Any other cosmetic & skincare products you might use
- Cotton swabs / balls / wool
- Q-tips (useful for more than just cosmetics)
- Spare batteries, and if you use rechargeable ones maybe a small spare charger

A word on **bar soap**: Probably as old as civilization, it can last a small eternity as long as it isn't left sitting in water, and good ones just get better as they age. You can use it to wash yourself, your dishes, your laundry in a bucket of water or in your sink – basically, if you can wash it, you can do it with bar soap. You don’t need fancy expensive designer soaps unless you want to, heck, our great-grannies even made it themselves from wood ash, water, heat, and fat. We, their descendants, just usually lack enough wood ash to make it worthwhile as DIY, unless we have a wood-burning stove or fireplace ;^) So just check around for a simple, cheap soap with a fragrance you like or none, there's no need to pay more than 100 cents per ounce when you can often get equal or better quality for 20 cents per ounce or less (going by dollar or euro prices).

The strongest remover of grease and oils among soaps, plus also having some antiseptic properties is **curd soap** aka hard soap, which can also be used in specific ways for treating inflamed wounds or infections – but please inform yourself properly before trying it, because open and infected wounds are nothing to fool around with. Note that "less is more" often applies here: soaps with lots of "skin care" additives end up being less effective in their cleaning (and antiseptic) power. Nice to wash your hands or even your body, but so is any body wash, but as a multipurpose soap, go for the cheap, effective stuff.
For really tough stains you can also use ox gall soap (sometimes also called ox bile soap), if you don't have and use other, preferred methods. That single block I got a decade ago has been a real savior a few times, but it's still barely worn down, because you usually need so little of it if you don't habitually get tough stuff on your clothes.
If a zipper, drawer, hinge etc. is stuck / doesn't work well or is creaking? Try rubbing some bar soap (or also useful **petroleum jelly**) over it, often you can get it moving more smoothly again.

Consumables (usually) less used but useful

For some things, keeping only one bottle or container around can be fine, if you use and need it only rarely, and get a replacement when only about a third to half is left in the container, so you don't run out. These are all "rarely used but good to have at hand when needed" things:

- **Petroleum spirits** aka White Spirit as a de-greaser and cleaning agent for specific purposes; keep away from flames and heat, and like most (petro)chemicals, away from anything food-related, as the fumes can seep out of the bottle and into other containers.
- "**Rubbing Alcohol**" aka Isopropyl alcohol as a disinfectant and cleaning agent for certain sensitive objects / surfaces, like electronic devices / parts, glasses and similar things, as a solvent, and even to make improvised hygiene wipes with toilet paper or paper towels. Careful, keep it and any such improvised hygiene wipes away from heat / flames! It also works as a **glass(es) cleaner**, just mix it with water with 5-20% alcohol. Add a drop or two of dish soap if there's a lot of fatty residue on the surface.
- **Denture cleanser tabs**. YYes, even if you don't have dentures (like me) these can be great, as long as they contain the right ingredients: baking soda, washing soda, TAED & sodium percarbonate with potassium caroate (potassium peroxymonosulfate) or potassium carbonate, and acids like malic acid and/or citric acid, plus a surfactant. The combination of these ingredients gives you a powerful, easy-to-store-and-use multipurpose cleaning tool, specially for things you'd otherwise use hydrogen peroxide for (which these tabs release), but without fiddling around with a bottle of it.
  Get cheap ones with the above ingredients, toss one in the **toilet** before bed, and even those hard-to-clean spots will be nice and clean when you flush in the morning. Similarly, you can get **stubborn organic stains** combined with **limescale** out of bottles, thermos flasks, teacups, you name it – for those you can often get away with even just half or a quarter of one of those tablets, if vinegar / soda / scrubbing isn't enough. **Important**: Don't seal the glass or ceramic bottle, jar, or mug containing the water and cleanser tab, leave it open in the sink while the tab does its work and releases its components. Rinse thoroughly after cleaning anything with these denture cleanser tabs.

Bleaching alert: Be aware that it has a bleaching effect on fabrics, so stick with surfaces that won't get bleached or damaged by it.
A tab of denture cleanser as long as it also contains TAED, sodium percarbonate and washing soda (others probably would work less well) can also work like your next strongest **drain cleaner**: Break a tablet into pieces small enough to fit through the holes or slits of your drain cover, pour a cup or two of boiling water after it (depending on drain size), and let it stand overnight. If you maintain your drains well with just baking soda and/or washing soda and vinegar (sometimes one, sometimes the other, sometimes both for the fizzing effect), you probably won't need it that often. Only against really big chunks of hair, or if a drain has been poorly maintained (cleansed from time to time) you might end up with so much gunk down there that these three things won't work anymore and you need the powerful hair-removing, massively de-greasing drain cleaner.
CAVEAT: Don't mix your denture cleanser tabs with vinegar. The type of tabs described here release hydrogen peroxide, and when mixed with vinegar this can produce peracetic acid, which is highly corrosive and can easily damage household drains.
Note that **not all denture cleanser tabs are made equal**: If you want denture tablets that also work really well for heavy-duty cleaning (toilet stains, tea/coffee buildup, bottles, etc.), don't just go by the brand – check the ingredients. If it only lists sodium bicarbonate + citric acid (or another acid) the cleaning power will be limited, even if it fizzes nicely. Same if there is no surfactant, no bleach system, or very little percarbonate. So look for the following ingredients:

- A proper base system: sodium bicarbonate (aka baking soda) and sodium carbonate (aka washing soda), plus an acid like citric acid – this gives both fizz and real alkalinity.
- Sodium percarbonate (aka sodium carbonate peroxide): This is the main oxygen bleach. In water it turns into hydrogen peroxide and sodium carbonate (washing soda), so you don't have to store and handle liquid hydrogen peroxide directly, with all the associated risks, and instead it is released when you need it (in water) in low, controlled dosage for cleaning and oxidation reactions.
- A bleach activator like TAED (strongly recommended): This makes the oxygen bleach much more effective, especially in warm/room temp water. If TAED is missing, the tabs can still work, but usually more slowly and less effectively, unless you use warm water.
- A real surfactant (e.g. sodium lauryl sulfate or similar sulfates/sulfonates): This helps remove and carry away greasy or stubborn residues.
- Optional, but good: Potassium carbonate: This boosts alkalinity and cleaning strength.
- Optional: Persulfates / "caroat": This adds additional oxidizing power. Careful: In some people it causes allergic reactions.
- I don't like mentioning product names here, but since some people might be wondering and don't want to read labels, and after checking what's available on the US market, "Polident Overnight Whitening Antibacterial Dental Appliance Cleanser" looks like an example of the right combination of ingredients – although I've never tested it myself, so I can't say for sure how well it works.

"Efferdent" probably packs a bit less punch than Polident as a household cleaner, but might work well enough. It uses the slightly slower acting sodium perborate (which has been banned for consumer products in the EU due to toxicity concerns) instead of sodium percarbonate and lacks TAED, but the potassium monopersulfate compensates for that to a degree (strong oxidation). The lack of washing soda (sodium carbonate) might make it less powerful against greasy residues, even though the borate from sodium perborate might help somewhat. For most purposes discussed here it should work well enough, especially if you use really warm water. You can add a bit of dish soap if needed to help with greasy stains. Personally I'd stay away from perborate.
If you can find any even cheaper store brand which fulfills the general criteria for ingredients, of course that works as well.

- **Hydrogen peroxide** (see Wikipedia) as also created by some denture cleanser tabs (see above) is a bleaching agent and powerful disinfectant (usually used as a 3% solution) including against mold, among a number of other uses. Admittedly by now I don't even bother with a bottle of H2O2 anymore, I just use denture cleanser tabs, as I don't need it that often, and find those tabs easier to store and handle for various uses – dissolved in water as needed. For certain uses, though, you need it as a purer liquid (and then usually diluted), so decide yourself if you want one, the other, or both or none. If you have no experience with it so far and did just fine in your life, you might not even ever need to begin with, or just try the above type of denture cleanser tabs for specific uses – easier to handle and store.
- **Bleach** aka a dilute solution of Sodium hypochlorite is not just a bleaching agent but also used as a disinfectant, including – if correctly used (please inform yourself properly before trying!) – for water treatment (disinfection), and also against mold stains and stains on glass and ceramic, like from tea. The general use spectrum of bleach is somewhat similar to hydrogen peroxide (see above) with some specific differences, please read up on both if you want to properly use either, and also decide which to use for what if at all. And please be careful, because "drinking bleach" is a dark meme for a reason, that stuff is very useful but also not without risks if used the wrong way.
- A bit of **beeswax** as sealant, a quick, reusable way to create all kinds of shapes and molds, and for impregnating fabrics, leather & wood (if you don't know how to use it well for that properly you can find the info online); in a pinch it can be used to make your own candles; if you're into that, also great for making certain body care products yourself – or even, like honey, for healing balms (again, read up on all of that if interested, so you know what you are doing, don't mess around with wounds carelessly). Beeswax can also help if your zipper is stuck (rub a bit of beeswax over it) or a drawer is squeaking. In theory you can even coat cheese with it to keep it fresh longer, but again learn how to properly do it and its limits and risks.
- A reasonable amount of **sand** (like for lining bird or rodent cages – or free from nature; don't use sand from places where animals might do their business!). Great as an abrasive for cleaning, or in a bowl to gently hold things upright that need a bit of support, like a candle (careful it won't tip over!), an incense stick, or a small mirror so you can see something in the right spot hands-free.

As long as it is uncontaminated and dry (again), it can be poured back into the container for future use. In a pinch salt or sugar can fulfill the same purpose, although as a lasting abrasive only as long as not getting wet.

- Here also **my take on Borax**, which I see people sometimes mention. Yes, it can be used for pest control to kill entire termite and ant colonies as well as to kill cockroaches and rats (and then you have a problem with a rotting rat somewhere in the walls…). Yes, it is also widespread in some parts of the world in various cleaning products. Yes, it is deemed non-toxic unless you consume it in insane amounts. Yes, the fact that it can cause respiratory irritation if you inhale too much of it is also true of various other typical cleaning agents. It has, however, become a candidate Substance of Very High Concern in Europe. Read up on the details about this and decide yourself if you want to use it, or if you have been using it until now if you want to continue doing so. I don't and have no need for it, YMMV.

Other things depend a lot on your personal situation. For example I use a special "coating" cleaner for the laminate flooring I have here. If you have wooden floor boards there are different, great ways to keep them clean and well-sealed (including with beeswax if applied properly), read up on it if you don't know how.

Paper & Hygiene products

Toilet paper since it is so bulky, together with **paper towels** and **packages of paper tissues** (tend to be cheaper if bought in bulk, and oh boy, you'll need a lot during head colds) should have their own storage / rotation area. Given they are also lightweight, you can easily store them in a nice looking basket or other container on some free spot on top of shelves, keeping the lower shelf boards for heavier things (remember: The heavier, the further down on the shelf it goes, not just for ease of handling, but also to make the shelf more stable).
Even if you usually use very little paper towels, it might still make sense to have at least 2-3 rolls extra in storage as part of your emergency preparedness. It is nice to mostly just use reusable microfiber cloths and/or giving old fabrics a new life as rags, but if water / electricity is down, washing those becomes not fun to impossible. Then those paper towels can see you through for a while for your cleaning purposes, or even work as improvised wipes with vinegar or no-rinse body wash.

As I mentioned at the start, have an idea how much you really use each of these things per month, or for tissues, if you want to go to "tier 3 preparedness", even half a year or more, since they are bulky but not as bulky as toilet paper / paper towels. Then gauge how much makes sense for you to have in your stash, and what would just be nonsensical hoarding. Remember: "if I can't get more within a month or two, we probably have different problems than how to wipe my nose or my rear end". Unless of course you have the storage space and want to be prepared for exactly that kind of extreme, catastrophic, long-term disruption of almost everything, including toilet paper and for more than a few weeks or maybe a few months, max. Really, please, people. Think if any situation and your personal preparedness plans really calls for mountains of this stuff. No more "toilet paper craze like it's 2020 again" ;^)

A side note on toilet paper use: Many make the mistake of getting the cheapest toilet paper, with just 1-2 layers, ripping apart more easily than a politician's campaign promises after the election. Usually that actually leads to more use, often enough even x2-3 and more. Some people also needlessly use several times more than they really need out of habit, and without any eye on the toilet paper quality. If you are not someone who habitually always uses giant amounts regardless whether needed or not, you can usually use significantly less per trip to the toilet if you get slightly “better”, thicker toilet paper with 3-4 layers (no need for the super deluxe version, just a bit thicker and absorbent). This is not just nicer to your lower region, and uses up less storage space for your extra supplies, you can also save money that way if you choose the right kind of toilet paper, and that little bit of money adds up quite a bit over the years. Sometimes “cheap” is more expensive, especially if combined with wasteful habits, and this can be such a case, depending on how you go about it when you “go about it” ;^)
If you have the right kind of toilet paper and habits, the average human needs around 1-2 rolls of toilet paper per week, give or take, some even a bit less. So 12-24 rolls of toilet paper (a typical larger package in most supermarkets) are roughly enough for 1 person and 3 months, unless serious “tummy issues” cause increased use (plan for that for your emergency preparedness planning!). YMMV, as always.

As another side note, you can easily make your own **improvised hygiene wipes** just from paper towels or toilet paper (preferably with at least 3 layers) and a bit of rubbing alcohol (ideally a 60-70% isopropyl alcohol solution with distilled water, but boiled water works too). Not perfect, not clinical-medical level, but works pretty well for both everyday situations and emergencies. Mix in a bit of any cooking oil, and you even have something to slightly soothe the skin. Keep a roll of these next to a simple repurposed hand soap dispenser filled with rubbing alcohol, and you can use your improvised hygiene wipes without even having to handle a bottle with a screw cap.

A PSA some might not like to hear about “flushable wipes”: Please don’t get them, please don’t use them, at least not as “flushable”. You can read more about why here: https://www.consumerreports.org/home-garden/are-flushable-wipes-really-flushable-a1736074350/

As a way to save money and reduce trash, and if you don’t mind the extra bit of work, you can also make **textile wipes / cleaning rags** from old fabrics – ratty old bedding, clothes, that sort of thing. Cut them to size, hem the edges (simple stitches are enough), and you can use them as reusable “improvised hygiene wipes”, or cleaning rags. I wouldn't recommend mixing the two use cases, though - one after the other, for obvious reasons ;^)
I'd also strongly advise against using anything but pure natural fibers like cotton or linen for these – and definitely not wool. Polyester and other synthetic fibers can't be boiled (more on that below) and may react poorly to some chemicals. If you use synthetic fibers for this, it's probably best to consider them your “eventually to throw away” rags you use for a while for really icky types of cleaning, and once they are too soiled / icky to still be reasonably cleaned over the sink with running water & detergent you throw them away. At least they had one second life before you had to throw them away. This saves you still some money over time, and reduces overall trash levels.

After you use your DIY textile wipes / cleaning rags, you can just collect them into a fabric bag (let them dry first or mold will happen in there!), and then toss them in the washing machine, as long as they weren't too soiled, in that case the below might be needed.
If they are really soiled, and/or you want them to be extra hygienic (not sterile! not for wound treatment unless you genuinely have nothing better!): You can boil these pieces of fabric provided they are suitable for such hot washes, like most 100% cotton / linen fabric is. They will lose more color over time most likely and maybe otherwise slightly change, but for such rags that's pretty irrelevant. You don't need to do an extra hot wash just for them, it's easy enough to do it "like granny did" on your stove. The steps are:

1. Rinse out any obvious dirt or gunk under running water, to reduce what ends up in the pot in the next step.
2. Boil them on your stove in a pot of hot water with a few shavings of hard soap or a small bit of dish soap / laundry detergent. Stir this from time to time with a long spoon, spatula or such (don't use wooden ones if possible) so they get well cleaned by the bubbling water and movement.
3. If they are super-soiled you might have to do this twice, as the water gets too dirty and you have to replace it, lest the soiled fabric sit in too much of its own dirt.
4. If you want to be extra hygienic and / or want to avoid soap scum to build up on them (can happen with "hard" water + hard soap), you can do a final round in a pot with warm water and vinegar or vinegar essence. Just let them soak in that and stir from time to time. Boiling in water with vinegar as a final step is optional. Important: Don't do the soap / detergent (alkaline) and vinegar (acidic) together in one pot, as they would somewhat neutralize each other.
5. Rinse them thoroughly in clean water, best under running water, to get out any remaining residues.
6. Wring out any remaining water, and let them dry in a suitable place, like over a radiator, a drying rack, or in whatever way suitable for you over a hot air vent, or simply laid out in warm sun rays. If you have a dryer ready to dry your normal laundry you can of course also put the wet textile wipes / rags in there with the laundry.

Eventually such DIY cleaning rags / textile wipes of course get too ratty or too soiled to still be reused, then their final trip to the trash happens.

By using such self-made textile rags / wipes you can keep your microfiber cloths for "the good stuff" which won't soil them too much (most cannot be washed hot), while for anything messier, these DIY rags / wipes come out. Only for things that would really ruin the rags needlessly should you then reach for paper towels as the throwaway option – saving money and reducing waste with such a "tiered system". Oh, and for some things you can also just use old newspapers as an improvised wipe to get rid of the first, worst dirt or spill, then paper towels for the remaining "fine cleaning", and after that these rags.
Our (great-)grandmothers used DIY cleaning rags like that for generations, so if you do it properly, and extra so if you have such a "tiered" system of what you use for what, you can actually live equal or more hygienic for less money & trash than many "modern" options.

Children & pets

If you have children / babies (I have no experience with that), of course anything from diapers to wipes to if they are babies of course baby food and what not also are part of this list. If you want your supplies to also cover “emergency situations”, maybe have some things stashed away specifically for calming them down or keeping them entertained during emergencies / crisis situations. You know your children best, whether that might be wise and what would work.

Same **if you have pets** (ooooh boy can’t have my fur babies go without treats!), ensure you have not just enough food and also some treats for them in your pantry as for yourself, but also any medicine they might need. Keep in mind that different types of pet food have different shelf lives, like most pet food for dogs & cats usually lasting around 6 months (some also a bit longer, unopened 12+ months), while plant-based pellets for smaller herbivores can usually last longer if really well stored – or so I dimly remember, but don't count on that. Inform yourself according to your pet needs and the food you use for them.
Please don't count on your pets being able to live off your food just "okay enough" during any kind of crisis or emergency, they can easily get horrible digestive problems from that very fast, or at worst actually ill. Again, inform yourself well if you haven’t about your pet’s dietary needs in this regard.
If they are animals that love toys, maybe also have 1-3 “spare surprise toys” sitting secretly somewhere out of sight and smell for them, be it because they just destroyed their current one (I always had several of their favorites for that reason), or to lift their spirits with an exciting new toy if that's what they need after a rough day.

Male & Female Needs

For **men and their beards**, of course whatever you use to maintain your beard also belongs into this category. Make sure you have enough spare blades, a spare bottle of shaving cream and / or aftershave if you use it, you name it.
If you use an electric shaver I highly recommend having a spare one, and/or even having (also) some shaving utensils that do not require electricity, so that in case of a prolonged power outage you are not left without. It’s not like most shaving utensils go bad fast or at all. Good personal grooming can make a lot of difference to how you feel, and if you prefer to be clean shaved it can make a significant difference on your spirits whether or not you can enjoy your shave as usual!

For women who are already and still menstruating: “**Feminine hygiene products**” are non-negotiable or things get miserable fast. If you are concerned about the stockpiles needed for this additionally to everything else in your pantry & stockpiles you maintain, and/or the amount of money you keep spending on it and the amount of trash you produce, consider getting two **menstrual cups**, one for use and one as your spare.
Menstrual cups are little devices or containers made from medical-grade silicone or similar material, which tend to stay good for use depending on details up to 10 years or more with proper care, some even way longer. They are inserted using any of several easy-to-learn techniques, much like tampons, and collect the menstrual flow.

You can look up the details about insertion & removal online, including as videos. If you give them a try, you might need to get used to the slightly different feeling compared to what you are used to from other hygiene products, but these menstrual cups are not less hygienic than tampons or pads, in some ways even more hygienic. They also pose a significantly lower risk of toxic shock syndrome compared to tampons.
Rather than throwing them away like tampons, they are emptied into the toilet (or any other suitable place if no normal toilet is available), and then preferably are well-rinsed with clean water and a bit of soap before re-inserting, or in a pinch, wiped clean with toilet paper. After your period ends, they get thoroughly scrubbed with water & soap (and maybe some vinegar), and you can also boil them (which pasteurizes them rather than fully sterilizing), or disinfect with other, chemical means.
If you want to or already use menstrual cups, I recommend having (at least) two of them, so that in case one of them gets lost, damaged, too contaminated for you to feel safe using even after boiling and disinfecting, you have a spare, and asap get a new spare one.
The higher cost compared to a package of tampons or pads might look steep, but if you calculate how much you spend on the latter within just a year, you can easily see how menstrual cups are also real money saving devices.

If you don't like menstrual cups, but also don't want to keep spending on throwaway hygiene products for your menstruation, there is also the "ye olde way" alternative: Menstrual pads made from fabric aka "**(menstrual) cloth pads**", these days usually with an inner lining from bamboo charcoal and microfiber as the inner absorbent, while a simple snap fastener holds them in place, much like the adhesive strip on throwaway pads.
These things can be washed by hand or in the washing machine with no problem and thus reused. Just rinse them thoroughly with cold water after you remove them from your panties, and later wash them properly. You can find them at places from Amazon to Etsy at times for as little as 10 bucks for 7 pieces, and they tend to last you for many years if reasonably well made. Only if you have such heavy bleeding that it's like the goddamn Red Sea is parting straight through your uterus might they be insufficient, or you have to switch them so often that it's a bit of a hassle. Alternatively you get – or make yourself with a bit of sewing skill – significantly thicker pads, thick like you probably need anyway as well if you are using throwaway pads until now).
Side note: These cloth pads are also great for ladies who are a bit older and /or otherwise might experience a mildly "weaker bladder" – why spend money on thin throwaway pads when you can just toss these cloth pads in the washer after a quick cold rinse?

Further household items

There are certain further household items always good to have at hand in addition – no need usually to rotate them with "1 in use, 1 spare", unless you use them a lot, then 1-2 spares can be great to have in your storage box. Beyond what I mention you might realize yourself if you think about your experiences of the past and what they can be good for.
For me for example it is always things like (non exhaustive list, but to give you an idea):

- **Toothpicks** are not just for picking your teeth. They can be used in an ice cube tray to make mini-popsicles (stick through a covering of plastic food wrap), for keeping food in place like when making a beef roll, for mixing things that will spoil whatever you use it for (like epoxy glue and other two-component adhesives), for applying tiny amounts of glue, paint or other substances to a surface and a lot more like that.
  In an emergency they can even be used for improvised candles as an improvised wick, but please read up on how to do this properly before you try, as they can also be a very dangerous fire hazard if you do it wrong. Having a nice box or two of tooth picks around as a very handy material is always a good idea.
- Normal **duct tape**, it has sooo many uses for it if you are creative enough. It is a repair & improvisation miracle for a variety of use cases, can turn your toilet bowl into an emergency port-a-potty with a trash bag if the water is out, oh and of course also tape up boxes, and although you'd never actually use it that way, at least you can imagine it over the mouth of people whose yapping annoys you ;^)
- Some kind of **fiberglass-reinforced / strapping tape**, great as a reinforced version of duct tape, or even make little shapes out of it by twisting & sticking it together if needed.
- **Electrical tape** or some other decent **self-fusing insulating tape**. Not just to quickly fix an electric cable until you get a replacement or such, can also be useful as a fix for other things where duct-tape is not that good to use.
- Some types of **glues**, from your normal, weaker “all purpose glue” to superglue (careful with it, it's really fast-hardening!), epoxy or other two-component adhesives, and/or mounting adhesive. These are all real repair miracles in tubes, as long as you know which one to use for what.
- Have / collect all those **rubber bands** and **paper clips** you get over time anyway from elsewhere, or a little box of either. Paper clips, bent to shape, are also surprisingly versatile for many things beyond holding your documents together. You can also combine cut-to-size pieces of paper or Post-it notes with rubber bands as makeshift, easy-to-remove labels on jars and other containers.
- A roll of **garden wire**, the typically green-coated stuff. It comes often with a little cutting mechanism attached to the package, so no extra tool needed. It’s amazing what you can quick-fix, tie together and so forth with it, and it also can work well enough as cable ties around the house if you don’t mind the green.
- A pack of **hook-and-loop / velcro strips**, great for cable management and for tying things together in an easy-to-open way
- A roll or three of some types of **string**, for similar reasons as the garden wire: To bind things together, to quick-fix them, to hang up something that's otherwise hard to manage, to secure cardboard boxes without the duct tape you'd have to cut apart, and many more uses exist for string: Rarely needed, but incredibly handy when you need it.
- A roll of **large trash bags** – they are great to cut to size as wrapping or cover material, or to use as an impromptu emergency toilet setup (lined bucket with cat litter, sawdust or earth – or duct-taped into your normal toilet bowl), you name it. They are also of course good to haul not just trash but also other things around provided they are not too pointy / sharp, and to gather things of the same type together and then store different types of things more neatly in their different bags in boxes.

- A reasonably sized box – or "bag o' bags" – where you stash away some of the **old, reusable plastic bags**, **bubble wrap** and other such packaging materials you might get anyway over time from your shopping trips. They can be very useful for many things, like reusing those plastic bags as trash bags if sturdy enough, and for all according other purposes mentioned above if suitable, like, using them as dust cover for things in your basement /storage, cutting them apart to have some throwaway plastic wrapping / covering, storing things more safely / neatly, and so forth. Oh and of course also as packaging material if you send packages!
- A bit of **packaging paper** you can stash away after you got it for free, and/or some **old newspaper** or three. Great to use as duh, packaging material, but also as a cheap throwaway lining or cover for things that might get soiled, as a spacer, as something you can cut to size as a pattern / mask when fixing something with paint or plaster, and you might come up even with other uses.
  Depending on the material and ink used for them, some old newspaper can also be used to soak things up or spread them out – not as well as paper towels, but for some uses it can be better than paper towels, or to tackle really icky spills or dirt with the old newspapers first, and then for the fine cleaning a bit of paper towels, thus saving up on the latter.
- A few **sheets of cardboard** material you can cut from boxes you get from your online orders or otherwise for free. It's handy to have around to cut to size as thin spacers, to stabilize something (especially combined with duct tape or reinforced tape), to create a sturdy template for something, and other such "throwaway uses", but also for more sturdy little signs and other DIY projects. You can easily use sufficiently large pieces also in one on top of open storage boxes, and thus they act as a simple DIY "lid".
- **Spares of the writing / office materials** as you actually use them, or might at least occasionally have need of, because it's no fun if your only one just broke / got empty and you need it: A spare ballpoint pen / pencil / Sharpie or three, roll(s) of clear office tape, extra pack(s) of sticky notes, an extra package of paper for your printer if you have one or for your writing needs,an extra pack of envelopes (also handy for sealing away small items and labeling what's inside).
- A package of a bunch of **cheap, sturdy erasers**. Easy to cut to size as spacers and for various other things, from simple stamps to elastic "clips", and you can use it btw not just to erase your pencil writing, but also some other kinds of stains (read up on it on the internet if you want to know more).
- A **good fixed blade and/or pocket knife**. Nothing too fancy, but a sturdy one that won't fall apart on second or third use. Bonus points if it also has little scissors attached – and of course the classic can opener (if you don't know how to use the pocket knife can opener without going insane, please look up a guide – it's really not as hard as you might think, as long as you have two working hands). Fixed blades (with a sheath) instead have the benefit of greater sturdiness as a multipurpose tool. Decide yourself what you prefer, or even have both; they can be darn useful and not ruin your kitchen knives. Store it in your "supplies boxes", as it will be your handy extra tool alongside the spare scissors & box cutters you keep in this storage box, ready to cut things to size.

- A (**spare**) **pair of scissors** and **boxcutter**(**s**): You realize how much you really need them when your only one just somehow gives up on you and you need it right now, and don't want to ruin your kitchen knives or pocket knife by abusing them as a box cutter. Have the spares in your box with the other, above supplies, and you have something handy to cut things to size or open what you need.
- A **spare, handheld can opener** or even two. Don't count on your fancy electric can opener to work when the power is down, and it can also simply malfunction. There are by now hand-held can openers so easy to use that even someone with serious disabilities can handle them, and for any reasonably healthy person so easy to use that, honestly, an electric can opener is more like a fancy, sorta superfluous gadget. Have one if you like, but don't skimp on having a real, easy to use handheld mechanical can opener, or if you want to be extra safe, two of them.
  I don't recommend getting the extra cheap ones from a dollar shop or such, because even for a dollar you might get less value than you spent, if you catch my drift. Check thrift stores, garage sales, flea markets and the like, or generally when decent ones are on sale, if you want to get a spare for cheap(er). Of course if you can get a used old one, first check it really still works well, and clean it thoroughly. Soaking it in a mix of vinegar and water also doubles as a (moderate) disinfectant.
  A classic of course is the P-38 can opener design: These things are just 1.5 inches / 4 cm long, and you can get decent ones dirt-cheap. Toss one in your pantry where the cans are stored, one can be put in the kitchen drawer, and if you get a package of several, another can go to your keychain / handbag / bug-out-bag. You need to know how to use one of these, or you'll probably go nuts trying. Of course they are not as convenient as larger ones with a leveraged mechanism, but they are cheap emergency tools with minimal storage requirements. Some even come with a small, slightly spoon-shaped extension, so you have the implement to eat right out of the tin can all in one.
  Btw, there are also tricks on how to open food cans without a can opener, and if you are interested there are youtube videos showing them, some are pretty funny, even if you hopefully will never need that knowledge.
  There are also can openers which **remove the lid without creating sharp edges**, which I cannot recommend enough. By using those, and after you ate the food, you still have a safe-to-use (cleaned) tin can with a loose lid you can simply fasten with a bit of duct tape as a simple, improvised storage container which is perfectly fine to use e.g. for random lose stuff in your storage boxes, for paint thinner you don't need to toss right after use and can leave around with fewer fumes leaking out as long as you place the lid on it, or also to make DIY emergency stove/candle types (I mention those under "General preparedness", for details you will have to look them up yourself).
  You can in theory even use these **"no sharp edges" empty tin cans** as surprisingly sturdy "**secret storage**" of important things: Just place whatever it is in there, seal the lid with a drop of wax or a small amount of not-too-strong glue in 3–4 spots inside, and let it dry. Make sure you leave a little gap somewhere that enables you to pry it open easily again, or first try it out with an empty can to see if you can safely open such lightly-glued ones with your can opener.

If you fill it in a way that it has roughly the weight one would expect from the label, and there is nothing clanking around in it, like cushioning it with a few cotton balls or other packing material, and add weights like small stones to reach the appropriate weight, you can place that can in your pantry between the others that have the same label, and even burglars will probably never bother to grab that can of spam, beans or whatever. Only upon closer inspection one can detect that this is not a normal can of food. As long as a house fire is not bad enough to melt the tin, or to damage with the heat whatever is inside the can, these cans can even survive and keep safe valuable / important belongings in case of a house fire. Just don't count on that, if you really think you need such, get yourself a confirmed fire-proof, fire-safe, really sturdy box truly suited for such heavy duty purposes.

- If you feel you need them: **Latex / Rubber (cleaning) gloves**. Some of us have sensitive hands or are just grossed out by certain things we have to do while cleaning – in that case, such gloves are a blessing and nothing to be ashamed of. Having at least one pair of sturdy, reusable rubber gloves is always good for when things get so icky they're genuinely entering health-risk territory, just as maybe one box of throwaway ones which are also usually thinner and more suited to some situations, plus for when you have to handle something so icky you wouldn't want to use those gloves ever again.
- A **spare flashlight** or more, preferably battery-powered (AA or AAA), powered with a hand-crank and internal battery, or even both. If you really need one, and the one you usually use just dies on you, that spare will be a godsend because usually when you need a flashlight, you need it. Personally I keep one small flashlight next to my bed, one next to the entrance door, both where I have the highest chance to suddenly need one, and one spare stashed away. If you have a dedicated pantry / storage room, hanging that spare flashlight on a nail at the entrance is handy in case the power is out or the light in there dies on you, you have your flashlight at hand immediately (there are also "lantern style" flashlights you could hang there on the nail at the entrance of the pantry, or sitting on a shelf right next to the entrance). If you have a dark basement, a spare there at the entrance might also be a good idea, it's not like decent small flashlights are expensive.
- **Glass jars**. Unless you really have more than enough, stash away a few extra glass jars of varying sizes you get anyway from the food you buy. Cleaned thoroughly, they can not only make pretty airtight food containers for your pantry (like for oatmeal, legumes, rice etc.), including for making your own preserves (as long as the twist-off lid still seals properly) and freezing smoothies. They can also be used as containers for all kinds of other things, including some of the things listed here, and so much more. Until you use them elsewhere, they can also serve as extra storage containers in your boxes of supplies, to keep things in there more neat while not taking up much extra space.
  Note that the **twist-off lids** of these types of glass jars often also have standardized sizes, and especially if you use glass jars to make veggie/fruit preserves yourself, or otherwise use them as food containers, and if a jar you like in size and shape gets its lid damaged or it stops sealing properly, you can always just replace the lid and keep the jar. So keeping a few spare lids around, even if you already have enough empty glass jars stashed away, can come in handy.

- Keep and store one or three **plastic cups**, and a few **small plastic boxes** with a reusable plastic lid, like from the yoghurt or fresh cheese you ate. Thoroughly cleaned, these can serve as extra, smaller storage containers inside your storage boxes for supplies like the ones listed above, to keep things more neat.
  The plastic cups are handy if you quickly need to mix or soak something that will absolutely ruin the container it was mixed in, like paint, paint brushes for cleaning, you name it. The plastic material can sometimes also be handy to be cut to size if you need a quick, improvised bit of just that. And the plastic boxes of course can also always serve as quick food containers for a bit of leftovers stored in the fridge, then thrown away or cleaned again for reuse.
  Pro tip: Larger yoghurt cups and those of similar size tend to have standardized opening sizes. If you get yourself some simple, cheap **silicon lids** of the correct size that can easily be placed with good grip on your currently open 500g / 17.6 ounces yoghurt cup, it will last longer in the fridge, and you'll save on cling wrap over time, plus it also turns the one or three clean plastic cups you keep around – simply stack one of your full yoghurt cups into it, no storage space wasted – into a quick "leftovers container" with surprisingly good quality, keeping your food fresh for a day or two (you shouldn't leave leftovers in the fridge longer than that anyway).
  Be aware that not all plastic food containers you get from your yoghurt, fresh cheese or what not are heat resistant. If the food was pasteurized in them, they can handle at least close to boiling point, or a bit beyond. If not, you can't count on that.

Medicine & First Aid

Have your well-stocked little "household pharmacy", but don't go overboard with it. Most of these things have a limited shelf life, and if you are not a prepper stashing, checking and throwing away routinely, instead, practice with your medicine the same principle: "get what you use, use what you get". So just have a good supply that lasts you a while with your normal use. Especially during supply shocks, before incoming severe weather events or other potential crisis times, many of these things can fly off the shelf fast if people panic and become hard to get for a little while, which really sucks if you need them quickly. Be well stocked, and you don’t panic when the next weather or supply hiccup happens.

If you consider using medical things beyond their expiration dates: Please inform yourself about which things can be relatively safely used beyond their use-by date, and for which that is extremely unsafe or even dangerous. There are indeed medications that can last for months, some even for years beyond the date officially printed on the package as expiration date, while others can, at worst cause serious harm or even be fatal if you use them well beyond that date. If you do not know this, and from a reliable source, not “some bloke said so on TikTok” (or similar), then err on the side of caution when it comes to medicine and any kind of medical supplies. You cannot detect spoilage or degradation with most of them the way you can with most food issues.

Standard medicines

Usually one box of everything is enough, and if you see it getting about half-empty or less, simply grab the package insert or cardboard box it came in and use it as a reminder to pick up a new one on your next shopping trip, or to order more soon.

If you have any medicine you are really dependent upon / use a lot, or which is always good to have at home, and which has a sufficient shelf life, maybe get a spare, and rotate them from there on. That extra box of **ibuprofen** and/or **tylenol (paracetamol, acetaminophen)** might save your day when you've run low and are not in a good shape to run to the pharmacy to get more, or if you can't because of a severe weather event or such, but desperately need it.
Same goes for things that have a fairly good shelf life like **panthenol ointment** (of your preferred brand), **ointment against bruises and sprains** (like with comfrey), **topical medicine against (light) burns** (note that lavender essential oil is amazing for this, usually mixed with things like aloe vera gel), and of course **Diclofenac ointments** / **gels** for topical pain relief (never ingest or use on mouth or mucosa unless specifically certified for that purpose!).

If you want to have spares for other things with shorter shelf life, it might be wiser to have one or two rather small tubes than one larger tube of things that do not stay okay to use for long after opening, like wound healing & **antimicrobial** / **antibiotic gels / ointments** like **Tyrothricin** **gel** ("Tyrosur"), **Neomycin/polymyxin B/bacitracin**, or something similar like that for small infected wounds, and **Benzocaine** **or** **Lidocaine** **gel** (if legal in your area) as a local painkiller, or whatever else in this category could make sense to have at least one in your little medicine box / cabinet.
Please take this seriously, even if you heard it before: Antibiotic / antimicrobial gels (and to a degree also ointments), once you open the bottle, do not stay safe to use or even effective for a long time after, the clock starts ticking. For your emergency supplies, it's wiser to have two smaller bottles / tubes than one larger one, even if it costs a bit more.

Add to it one bottle / package each of your preferred **medicines against head colds & co** as well as for **diarrhea / "stomach bugs"**. Almost all of us can suffer from those occasionally, or will at some point, and in a crisis situation we can least afford it and need it most, so being stuck without when you can't easily get some is a bad time.
For medicines against head colds and other respiratory illnesses: What you prefer for this is really up to you. It can range from your regional version of NyQuil to some medicinal drops. I highly recommend also something for steam inhalation (if not using salt / essential oils), some herbal teas (see below), an antitussive, or whatever else – it's up to you.
The same goes for whether you want to have a serious battery of things to "treat the tummy" or just stick with a bit of activated charcoal or even a formulation of activated charcoal+ myrrh extract + chamomile extract in case your intestines are one day struggling with a light case of food poisoning, a "tummy bug" or such types of ailments.
If you do not know how these things work and are curious, again the internet has plenty of information on them, but please be extra careful to consult credible and several sources when it comes to matters of health & medicine, not just some random website of unknown credibility.

For diarrhea and other issues it might be also good to have a bit of **electrolyte powder** at home: When you get really dehydrated from sweating with a fever or massive diarrhea / vomiting, these can be a godsend, and the little sachets keep well for a long time. The most important parts as "electrolytes" to cover in such situations are usually Potassium, Magnesium, Calcium, and Sodium & Chloride (= salt), mixed with a bit of sugar.
If you don't have such ready-made electrolytes, consuming some sodium, some milk or dairy (if not problematic for whatever ailment you have), or fruit juices and smoothies can also help cover many of the bases. You can also make a simplified “home electrolyte water” with this recipe: 1 liter / about 4 1⁄4 cups of water, 4 teaspoons of sugar, 3/4 teaspoon salt, and 1 cup of orange juice. Another recipe involves apple cider vinegar, lemon juice, salt and honey.

If you have any other types of occasional health problems, add **other types of common remedies** for those as well, from laxatives, to some gel to treat sunburns if you are prone to them, to anti-allergy medication for those of us who suffer from them. If you live in a region where insect bites are annoying to pure misery, maybe add something to treat those.

Structure your medical supplies around your needs, not some random lists on the internet, including this one. The above are just some common types found in “house pharmacies” people keep around. If you use benadryl often, then that’s what you have in your medical supplies in sufficient amounts to last you a while. If you never in your life needed a laxative, it’s utterly pointless to get some. If you've never had a head cold, how did you manage that?!

If there is **medicine that is not OTC and you need it**, talk with your physician about whether they'd be willing to prescribe an extra supply, so that you can have the “rotating principle” as described under “Household Items”. This might save you a lot of stress if for some reason you can’t get your prescription refilled as planned, and have to cover some extra week(s).

If you or anyone in your family takes medicine regularly, or is even dependent on it, just as any prescription medicine, I recommend having it printed out, together with any serious health conditions anyone in the household might have – from allergies to having a pacemaker. If possible, laminate or otherwise try to get it in a waterproof casing (like using the plastic from a document sleeve, cut to size and taped shut, if you have nothing else). Have this little “card” in your wallet, and hope you – or whoever carries this in their wallet – will never need it. Also store it on your cell phone if you have one and can. EMTs are always happy when they find these types of important information in the unhappy situation they might find someone in.

Household remedies

Here also a list of at least a few “household remedies” of the more herbal kind I always recommend having around in your personal household pharmacy, as they target a variety of things most of us sooner or later have to deal with. Almost all of them have a pretty long shelf life as long as they’re stored properly (the usual “dry, dark, not too hot, away from pollutants & pests).
I only list briefly how and what for they are commonly used, so please read up on their use, proper preparation, contraindications and so forth before you use them, to ensure you know

what you are doing – these are remedies, and as all remedies there are some conditions which are contraindicated (e.g. if you have gallbladder or kidney stones or a tendency toward them, drinking too much peppermint tea can become problematic). Note that there are tons more but this would go beyond the purpose of this document. If you are interested, you can read up on herbal medicine a lot more, this is a deep and vast rabbit hole to explore.

- **Tea Tree oil**: This can help with wound disinfection and healing, to combat head colds as part of a steam inhalation, and most pests hate the scent (insect repellant – if too much potentially also a people repellant, as some people don't like the scent, either ;^)
- **Myrrh essential oil**: Used since antiquity to treat wounds and sores, as it is somewhat anti-microbial / antiseptic / anti-fungal and supports wound healing, plus it can slightly reduce pain and swelling. It can also be used as a mouth wash or dab dab inflamed / infected gums with excellent results, but take care to never swallow it, as high doses of myrrh can be toxic if too much is consumed. No need to panic about using it if you accidentally swallow a little bit, humans have used it for millenia just fine, just spit it out after letting it sit for a bit on your gum, and then thoroughly rinse your mouth.
- **Lavender essential oil**: Amazing to treat burns and good against some types of insect bites. Excellent, especially if mixed with **Eucalyptus oil**, for steam inhalation when you have a head cold. Moths tend to hate the scent of lavender oil, so a small bag of cloth with a cotton swab with some lavender oil on it can keep them away from your clothes, and many insects don't like the scent of eucalyptus oil. Lavender oil is also relaxing for many people, and a drop on a paper tissue, placed under your pillow can help you sleep better as long as you like the scent, and it is mildly anxiolytic (anxiety-reducing).
- **Chamomile tea**: Anti-inflammatory, anti-spasmodic, relaxing, mild pain relief, and supporting your immune system. So great for a lot of uses, from getting better sleep in the evening, mixed with maybe some **anise seed** (cough suppressant – careful, only very few seeds per cup!), **licorice root** (mucolytic), **lime blossom** (mucolytic, anti-inflammatory, relaxing, mild pain relief) to name just a few other good, tasty herbal remedies which also have some other uses you can read up on. If you want to know their full spectrum, please read up on them, it's a lot.
- **Peppermint tea**: Anti-spasmodic, anti-inflammatory, relaxing and invigorating at once (so not good before bed time), helpful against a variety of "tummy problems" (stomach and intestines) and nausea. It has no real "cooling" effect but stimulates the cooling receptors in your body, making you feel cooler than you actually are (which makes it so well liked in hot climates). Enhances gall production which can help with digesting greasy food. Somewhat antimicrobial capacity which can even help with some types of "stomach flu" or intestinal infections. Temporarily enhances in many people cognition and memory (but don't expect miracles).
  Caveat though, peppermint tea has a serious list of contraindications, and some people simply do not do well with it, leading to stomach cramps even without any conditions that would otherwise indicate issues with peppermint.
- **Comfrey Ointment**: Used to treat (moderate) blunt trauma like sprains and bruises, comfrey should never be used orally or on open wounds. To ease the pain and slightly speed up the healing as a topical ointment it can be quite effective, though.

First Aid Kit

Also have a **good first aid kit** at home, not just for general “crisis” preparedness. you need it rarely and hope you never need it, but you will be glad if you have it when you need it. Unless you are trained in more complex first aid procedures, it is pretty pointless for most people to get the giant bags of tons of different things – you are not an EMT, this is mostly about things for everyday injuries or to cover you until you can get to an ER or seen by an EMT. If you want to be more prepared, first take a first aid class, that is more valuable than whatever fancy big bag of first aid supplies you might get and barely know how to use.
Of all the things for preparedness, having the critical items in a first aid kit might be the first and foremost priority. Untreated wounds can become a real problem really fast, and during difficult times, like when the power is out, when people are nervous, stressed or panicking, injuries are more likely to happen while getting medical help can take longer.
There are also complete first aid kits available, which might be cheaper or more expensive than if you buy the individual items and put them together in a suitable container or bag you already have or pick up for the purpose. Be aware though that the market is by now flooded with cheap trash, usually from certain parts of Asia, and while it might just be annoying if the cheap Temu trash gadget you got on a whim breaks on you fast, it's a different story when it's something as important as your first aid kit. If in doubt, check with your local pharmacist to get a good quality one.

Keep in mind that those things that need to be in contact with wounds, like wound disinfectant, wound dressing etc. **have a limited shelf life** before they are not guaranteed safe (sterile) to use anymore. With most food beyond its shelf life, you can trust your eyes, nose, and taste buds – but not with these things. They are not expensive, and better to replace them when they are past their due date than risking a wound infection from things that are not safe to use anymore. They might still be better than nothing if you have nothing else and the packaging was still airtight and undamaged, or if you could somehow thoroughly disinfect them first. If you can, always opt for replacing though, it's simply safer, and maybe keep the old ones as spares until you find another use for them. If you want to know more about that, please read up on these matters so you have a good understanding of what is safe for how long and why, and what can be used longer than the use-by date if you know what you are doing.
Sometimes you can absolutely repurpose old things beyond their use-by date from your first aid kit for other things. I will mention with some of the items below what they can be repurposed for if still unused and after replacing them with new ones. Some animal shelters or (for training purposes) organisations also accept such old materials, so you can check for and with them.

- **Band aids** of various sizes, and **medical tape** for securing wound dressings; can be repurposed for labeling things, marking boxes, bundling cables, taping (smaller) things together, and similar purposes
- **Elastic bandages** for sprains, fixing improvised splints in place etc.; keep the clips stored with the bandages so you don't have to search for them when needed; can be repurposed as protective padding / wrapping for fragile items, to hold items together, including as temporary clamps or wraps for all kinds of DIY / art projects

- Maybe some **spray dressing / liquid bandage** (small bottle unless used often)
- **Triangular bandage** not just for resting an injured arm in, consult an instruction video or first aid article / class how else to use this ; can be repurposed as rags, straps or improvised ties, basically it's just pretty sturdy fabric for all kinds of things
- **Gauze bandage / pads** in for you and your family / risk profile sufficient amounts; can be repurposed as lint-free cleaning cloths, e.g. for cleaning glass, electronics or other, similar small devices (maybe with a bit of isopropyl alcohol or whatever else needed), or as bandages similar but less firm as elastic bandages
- **Non-adherent wound dressing** (pads, sheets or strips) in amounts sufficient for you ; usually can be repurposed just as gauze pads (see above)
- Packages with **disinfectant / alcohol swabs** (individually packaged, single-use), again depending on your and your family's risk profile ; can be repurposed for cleaning surfaces where max hygiene is not critical, and is usually also lint-free
- **Cotton pads / balls**, of course preferably the sterile-packaged ones (in an emergency if you have nothing else of course the cosmetic ones with ample disinfectant can also do the trick better than doing nothing in most but not all situations) ; can be used just like normal cosmetic cotton pads / balls, including for dusting or polishing
- Throwaway **medical gloves**, at least one or two, or once more just depending on your and your family's risk profile ; can be used still for anything that doesn't require medical level of hygiene, like normal household cleaning, painting, or anything else that might get your hands icky-dirty
- A **face mask** or three, mostly to protect others from your germs, not the other way around; can be repurposed as dust protection during household chores or other non-critical situations (for really dangerous types of dust, like in some construction work, please always get appropriate protective gear: I have seen people waste away from the consequences of not doing so for too long, and it is a very ugly kind of death).
- A **blunt-tipped pair of scissors** to cut things to size as needed, and to quickly cut things open if needed.
- A pair of **tweezers** to remove splinters and other objects from wounds. If you want to also remove really tiny ones, a sufficiently **small magnifying glass** can be great.
- A **medical thermometer**. If digital, remember to also have spare batteries fitting for it. If non-digital, be aware of what it contains and how dangerous it could be if it breaks.
- A bottle or three of **wound disinfectant**, for I guess obvious reasons ; depending on the contents, it can be repurposed as a cleaning agent for non-medical purposes.
  This can be, or can be additionally a bottle of **iodine solution**, which can also be used for water disinfection. Please inform yourself how to do this properly before trying.
- Optional: A bottle or two of Medical-grade **isopropyl alcohol** (also good for certain uses as a cleaner) or medical-grade ethanol. If not buying it pre-mixed, it needs to be mixed 70:30 (70% alcohol) with clean water (distilled or boiled, if you want to be thorough). This is a good disinfectant for topical use, and doubles as a great cleaning agent for various things in the house (especially electronics).
- Optional: If you want to be extra careful / well supplied, also a bottle or three (or a few small, sealed, single-use ones) of **wound irrigation fluid** besides the wound disinfectant, like a bottle of saline solution to first clean dirty wounds, and after that use

the bottle of wound disinfectant, so you don't have to waste disinfectant cleaning really dirty wounds.
    - Optional: There are also very small single-use bottles (or rather, plastic vials) of such irrigation fluids to wash out eyes that have gotten in contact with irritants or small pollutants, but please don't attempt more than that if you encounter serious eye trouble or injury.
- Optional: Some **wound closure adhesive strips**, “**Steri-Strips**”, for wounds that need, duh, closure but are not so big they would need stitches, or until you can get stitches. I recommend you check a reliable source how to use them properly, and what kind of wounds to use them for and what absolutely not
- Optional: **hot & cold packs**. Great for a number of medical situations (or the warmth just for comfort). There are some chemical-based ones that do not need to be refrigerated / heated, such as “instant cold packs” and “instant heat packs”. You can even go for both, the chemical “instant” versions (they do not have infinite shelf life!), and some reusable ones you usually store in your freezer to have at hand if needed, and can also be heated if you need a hot pack instead. Even if they are beyond their use-by date (if they have any), as long as they work they work, and you're not using them for purposes that require sterile material. If anything, you can use them as cool packs for your cold beverages.
  Having an old-fashioned **hot water bottle** or (heated in the oven) **cherry pit pillow / bag** for those "I need something warm" moments can also be a blessing in some situations.

Anything beyond that is mostly really “extra”, or you would need to know how to properly use it – like after taking a first aid class – and then you'll know yourself what might make sense to add to this list for your home first aid kit or what not. The same goes for highly optional things for truly emergency situations like a dental first aid kit (some exist even for doing your own temporary fillings), but if you are not reasonably sure that you would be able to use such a thing it's pointless to spend the money on it.

If you can and want to be extra prepared, have two kinds of kits: One that One that covers the most important basics for situations you might encounter on the go you might “encounter on the go”, kept in your bug-out bag or the trunk of your car, in a sufficiently sturdy and water-resistant box or case; the other is your larger household medicine box / cabinet with everything (else, or extra).

General Preparedness

Again, this is not about going into full prepper mode, it is about thinking calmly about the realistic potential hiccups that hopefully never do, but can happen in your life, from appliances breaking down, to power outages, to temporary disruptions of "the grid" – water, electricity, sewage, food logistics (& cooling) – and the many things you might suddenly have to think about like never before.

The following information serves two purposes:

1. To give you a few ideas of “things that might go wrong but are not full long term catastrophic crisis” and then do your own thinking of what would make sense for you, as YMMV
2. To give you a few simple, cheap solutions to consider for common problems that might come up during “temporary hiccups”.

And here the most important thought of it all: Think about these things while everything is fine. While you have electricity, municipal water, a working sewage system, a working fridge / freezer / washing machine / computer / smartphone, and internet access. Anyone who has ever weathered a more serious natural disaster or other crisis will confirm that this becomes a luxury fast when a real crisis hits. And if you need to repair your computer, you can't look up how to do that unless you have a backup – even if it's just your smartphone and an internet connection.

By informing yourself now, you have the knowledge you hopefully will never need, but which will save you a lot of extra stress, panic, and figuring things out on the fly when things go wrong, with much more stress while you are potentially already busy with plenty of other stressful things. At worst you could try risky or outright dangerous things in such situations when you have no idea what to do, but need to do something.

Being prepared will also give you peace of mind from now on, knowing that you know what to do in such events, and that you have your basic general preparedness tools & materials, or getting them one step at a time: Not in a hurry, not to break your wallet in one go (most are not expensive anyway), and otherwise get on with your life.
Think of them as a long-lasting, "once paid for" insurance policy, hoping you will never need to use them for that kind of purpose, while some of the items on this list are genuinely useful also in various non-crisis types of situations, or can help turn the rare but inevitable smaller hiccups of life into something swiftly handled rather than a giant annoyance.

Resilience is not about being superman, or having a giant stash of fancy tools and materials. Resilience is having the knowledge you really need when you need it, the mental clarity and calmness to do what needs to be done, and then, as you can, getting and having those things that make sense for you, and the contingencies you want to cover.

Cars & Fuel

This of course only matters for people who have **cars**: If you want to practice good emergency preparedness, never let your fuel tank drop much below half, and always have a **spare canister of fuel** in the trunk. In emergencies, or if for some reason you did forget to refuel your car, that spare canister of fuel can make you glad you have it, as it gets you to the next gas station.

If you want to have some emergency preparedness and / or money saving routine regarding your car, and have the storage space for it, consider getting a few sturdy fuel canisters – larger ones if you have the space and fill them preferably when fuel prices are relatively low. Store them somewhere safe: Well ventilated, away from any heat or flame sources, and of course preferably also nothing flammable around them, nor any food items. A garden shed or similar spaces are perfect for it.
When prices skyrocket, you can use your spare fuel first, and hope prices calm down before you run out, and even if not you saved some money on those gallons of fuel you had in storage. At the same time they double as your emergency supply if there is a disruption with the regional fuel supply, sometimes preceded by fuel rationing first (ask anyone who lived through the 70s in certain parts of the world and they can tell you).
If you want to do this, please check first about your local law codes: Some nations or even states / municipalities heavily regulate how much fuel a private person is allowed to store and/or under what conditions. No need to get yourself in legal trouble with this.

I highly recommend also having a **simple basic first aid kit in the trunk** of your car, as it is even mandatory in some regions of the world. You hope you never need it, but when out and about with your car and you get injured or see someone else injured, this might save the day.

Btw, there are **power banks that can recharge a car battery** – at least enough to get a gasoline-powered car started, in case the battery is depleted. hey tend to cost a little more, but are not that much larger than the power banks people keep around to recharge their smartphone or tablet. If you own a car and are concerned about this, and you are getting a new / additional power bank anyway, it might be worth looking into these options.

The bug out bag / shelter in place / evacuation matters (up to you)

The concept of the bug-out-bag is basically a bag you can grab at a moment's notice and take with you, and contains all the most important things you might need in an evacuation situation. What exactly belongs into that bag, people can argue about endlessly. It can be as little as just your handbag with a few small extras in it like a mini first aid kit, a mini flashlight, maybe a (mini) multi-tool or according pocket knife, and all your important personal documents in a small binder, plus your personal organizer (if you use one) and maybe a lightweight backup storage device of your most irreplaceable digital data (SD card, USB stick etc). Others pack a bug out bag as a veritable survival kit in a large backpack which would make special forces envious of how you can survive with it in the wilderness for not just 72 hours, but weeks.

What makes sense for you and your general preparedness level is up to you. Keep in mind that if you barely know how to use most things and are confused how to not be miserable on a simple short hiking trip on safe paths in a national park, then this fancy “108 pieces survival kit” you might find raved about as so amazing by others is most likely bordering on useless to you. The same way a multi-tool with the right kind of tool functions can be a blessing for someone in a “we are still in civilization spaces” evacuation settings, while most likely just useless weight to haul around for someone who plans on spending days or more in the actual wilderness.
This is another prime example of how "preparedness" and "prepping" can be wildly different beasts.

If you live in an area where specific types of natural disasters or catastrophic accidents can occur (inform yourself!), be aware of them, what risks and problems arise from them depending on your and your family’s living situation and needs (including potential medical issues), whether it makes more sense to shelter in place, to be ready for (self-)evacuation at a moment's notice, or both depending on the situation.
House fires can happen anywhere (though the risk is higher in buildings with a lot of flammable materials), wildfires not everywhere. A flood plain exposes you to different risks than tornado alley. If you want to practice general preparedness, design how you store things in your home accordingly, and also any bug out bag you might have.

If evacuation is something you have to consider as a potential event in your life, at least have those things ready to grab within moments, without having to think about it, like that binder with important personal information & documents, maybe the digital backup medium, plus of course your smartphone, wallet, personal organizer, and if needed, any medication you absolutely depend upon for your health and life. The same goes if you have dependents (elderly or infirm family members, children, or people with disabilities).
Be aware of evacuation corridors, and have not just one route to leave the area but if possible more than one, because your usual route might be clogged with traffic or become unusable for other reasons.
Having a paper map of the wider area if you are not overly familiar with all the roads and possible evacuation corridors (and don’t want to / can’t reliably memorize them) might also be a wise idea. Just have it in your bug out bag / evacuation bag, or toss it in there when needed. Remember, when evacuation situations happen, the power / mobile internet might be already down, so your smartphone can't guide you via online maps anymore.

Anything beyond what I explained here as typical practices and recommendations regarding bug out bags, evacuation and so forth would go beyond the scope of this document. The above information just serves as your starting point, and you can think about it and inform yourself further if you like, from people far more knowledgeable than I am about these matters, online and elsewhere, who have real-world experience to share.

Important personal items

Do you wear **glasses**? If you can afford it, maybe think about getting a second pair, because if yours get lost or break, suddenly the world looks so much worse (pun very much intended). If you wear **contact lenses**, same thing, and if you wear disposable contacts, make sure you have a sufficient supply on hand as well, depending on your “preparedness tier”.

The same of course also goes for **hearing aids** for those of us who need them, and don’t forget enough batteries to keep them going.

This also goes for other **important medical or other devices** you or a family member depends upon or would be miserable about: If you can, maybe try to get a spare in case something goes wrong with the one usually in use, and have enough of whatever consumables are involved to see you through supply hiccups – from disposable syringes and wipes to specific fluids or even oxygen tanks.
This does not mean you have to get a second pair of crutches or other walking aids, unless you really want to, given these things are usually damn sturdy. If you can find a spare somewhere cheap – garage sales, thrift stores, whatever – and have the storage space, go for it. If anything you can maybe decorate them differently to be the cool ones you only bring out for certain outfits ;^)

Also under this heading fall all other things that are important items for your personal well-being, or otherwise important to you. For example: If there is some kind of keepsake you would really miss and be sad if you lost it, and if you have some kind of preparedness plan for evacuation / a bug out bag, have it ready to grab at a moment's notice and take it with you. It is okay to be emotional about such things, we are not biological machines – we have hearts that can hurt just like our bodies, including when a dear keepsake is lost .

Personal information storage

Personal information is something rarely mentioned when you read up on recommendations and lists about “crisis preparedness”, and it is indeed (usually) not anything relevant to ensure your survival. Nonetheless it sucks a lot, and at worst can make your situation way worse when you suddenly can't access or lost all those important phone numbers, email addresses, important personal notes, passwords, you name it – not just during a crisis!

Nowadays people tend to trust their smartphones and / or computers to always work, and never lose the data, and many never practice **good backup strategies**. I highly recommend that if you store any important data on your smartphone or computer to back it up in at least two places, so that even if your device fails and one backup along with it, you still have a third. If you do this thoroughly, you will never lose any of your important and / or otherwise irreplaceable and relevant data. I speak from 30 years of experience, and some ancient files on my computer can attest to the effectiveness of my rolling backup strategy.
If you are fine with storing personal data in a **cloud service** (careful, not all of them are safe for

this!), they can be an excellent way to store important data outside your own home, so in theory you could lose even your home and as long as you do not forget your password into your cloud service account, you can still regain your data later.
Here's my urgent advice, though: Never ever trust only a cloud service and nothing else as backup for your data. If that cloud service goes out of business, the data center where your data is stored gets torched (ask folks in the Gulf States in spring 2026…), for whatever reason your account is gone or you can't access it anymore: Gone is your data. This is unlikely to happen, but it is not impossible.
The simplest, cheapest way to do this (if you are not concerned about privacy / security) is getting some free cloud service storage like you get with a google account, or the limited free tiers offered by services like Mega, MediaFire, Dropbox, Proton, or even Microsoft. For more storage, you'll have to pay, and keep in mind that if you stop paying for whatever personal life reasons, that data will eventually get deleted in most cases.
Otherwise anything from a **spare hard drive to an SD card or USB stick** (depending on the amount of data) is usually just fine for backup. I recommend even a combination of those, so you have 2-3 different types of media. Always keep your physical backup drive air-gapped from your computer or smartphone when not in use, so that if a virus bricks your device, it can't spread to your backup drive.
A word on burning backup data on **DVDs / Blue Rays**: Yes, this can be a nifty way to create a "can't be erased" backup – until it isn't. Many people are not aware that these disks have a limited shelf life: most start degrading within 10-20 years, some even earlier. There are special, more expensive ones with (allegedly) longer shelf lives, but honestly that's overkill for any private backup strategies, just stick with your 2-3 backup devices (+ maybe cloud service).

But what if you have no access to electricity anymore, and desperately need some important information stored usually on your smart phone / computer? That is where the hallowed old invention of the **notebook** or personal organizer – think "Filofax" – comes in.
I highly recommend that everything important, like all your passwords, important phone numbers, addresses, email addresses, and any other important information and notes is always stored in such a way also on paper, no matter where else you store it also digitally. Ensure of course that no one with nefarious intent can get to or even steal this personal notebook / organizer, given how much havoc they could wreak with it (just as they could from your stolen smartphone).
With such a paper copy of all important information a goddamn EMP or giant solar storm could fry every device in the entire region, and you still have at least your important personal information safe on paper with you.

Important Documents: If you want to combine this backup strategy with general "emergency preparedness": Make sure you can always grab your personal organizer / notebook, the backup medium with your valuable data, your personal ID / drivers license, your wallet (with always a bit of cash in it), and any other important personal documents – and be able to take them with you at a moment's notice.
Or always keep all of those together in your handbag, but be careful: If your notebook / personal organizer contains your passwords or other important information that can be abused by the thief, if that handbag gets stolen, you are in for a lot of headaches.

Some people also prefer to have some kind of small binder (or even vacuum-sealed plastic bag, if living in a flood zone) where they keep all their important documents, or rather those not already in their handbag or wallet, and thus have them ready to grab at a moment's notice – or just keep them in your bug-out bag anyway.
Depending on your personal situation and circumstances it can even be a good idea to have copies of all important documents & information on paper in a binder “ready to go”, while the originals are sitting somewhere else. YMMV.
Hopefully it will never be necessary, but you will be glad to have everything together in a heartbeat if you ever need to quickly leave, for whatever reason. And beyond that, if you just need it in everyday life and wonder where you left that one piece of document, you will wish you had always kept them neatly together in a binder.

Important information access

There is another type of information to think about. Examples are any kind of topics you might need to look up in case of power outages, any kind of maintenance or how-to information. This is less about the personal information in your Filofax (see above), than about anything from cooking recipes to operating manuals to DIY-methods to safety tips you might have not memorized for rarely-done things.
If the power and internet are down, you can’t simply look things up online anymore, and even things you saved on your tablet or smartphone won't be available once the battery dies, unless you have a way to recharge it off-grid.

Therefore it might be a good idea to have your little folder with printed-out useful information, and/or a notebook with things you've written down that could be especially relevant during power or internet outages.
That little **file folder with cooking & baking recipes** (especially those you do rarely) in plastic file sleeves is useful in your normal everyday life, but if the power is down can be a real blessing to have. You can of course also get some cookbooks (including 2nd hand when cheaper), or simply create a self-made “cooking book” of just a pile of printouts in file sleeves. These can be handy also just for your normal, everyday cooking & baking from time to time, kept safe in the sleeves from the occasional kitchen spill or oily, dusty hands, while it is also one of your little “preparedness layers” at the same time: Once more you get what you use and use what you get. Online collections of cooking recipes are a great source to create over time your own collection of recipes, as long as you have access to a printer.
For **operating manuals**, safety leaflets, and the like, don't throw them away, simply shove them into a plastic file sleeve or plastic bag, maybe duct-tape it shut, and duct-tape it to the back of the device(s) in question, or store it anywhere close to them so you can easily find and access it when needed. This is not just helpful in case of power & internet outage, but also in everyday life: Being well organized saves you a lot of stress and time when it matters, while costing you little to nothing beforehand. Unless you follow the saying “Those who are well-organized are just too lazy to keep searching for things” ;^)

Paying for things

Many “emergency preparedness articles / videos” skip over this part. The reality: As long as you are not alone in the wilderness, or everything has broken down to “only bartering”, you will still need to pay for things. When electricity is down, all those electronic payment systems, from credit and debit cards to smartphone payments won't work anymore, as people in various parts of the world have found out.

Thus, if you want to have that part of your “hiccups & emergencies preparedness”, always have a sufficient amount of **cash money** at home in small bills and assorted coins, ideally enough to cover at least 1-2 weeks of typical expenses, with a bit extra as a cushion in case you need some additional supplies / replacements.
If in doubt, simply put a few bills and coins in a piggy bank, a glass jar, or even (as I mentioned before) an empty former food tin can you opened with one of those can openers that leave no sharp edges and allow the lid to be loosely placed back on, then put a bit of wax or easy to remove glue on 3-4 spots to hold the lid in place, and you got your “emergency cash stash”. With the tin can you can even store it as a “secret reserve” even burglars will most likely ignore between the other food cans of the same type in your pantry. If you want to do things extra safe regarding this, remember the old saying “never put all your eggs in one basket”, and have at least 2-3 containers like this in more than one room. You can also for example simply place bills between the pages of a book that sits innocently between all the other books on your bookshelf, also usually ignored by burglars if that’s a concern for you.

Besides as your “emergency preparedness cash”, it can also serve as your **piggy bank**, as part of the money you save up over time, and grow over time to more than 1-2 weeks of typical expenses, which you can use for when an important appliance or other item needs to be replaced, or any other urgent, unexpected bill that comes up.

Some people also add **silver coins** to this list, as a “those are valuable even when current money won’t be accepted anymore”. That is true in theory, but applies to the kind of really catastrophic scenarios where basically so much of society and governance has broken down that we are entering some pretty rough territory way beyond the scope and philosophy of this document. Decide yourself if this is worth preparing for a little bit, given how unlikely these scenarios are for most parts of the world.
Keep in mind though something that people found out the hard way as they had to go through such times, be it people in WW2-occupied territories, Germans at the end and right after WW2, or people in certain civil-war-torn regions of Africa more recently: If you are dealing with those types of horrible scenarios, often even your silver coins suddenly won’t get you that much anymore, because you can't eat or wear silver coins, as everyone painfully realized. Farmers who could sell (and protect) their produce during such times got amounts of silver and gold for simple food that would boggle your mind.
YMMV, but I consider silver coins as an “emergency currency” fairly irrelevant, except in some very narrow scenarios. For investment, that’s such a different, vast topic I won’t cover it here.

Clean Water

Water we already covered above as part of your pantry to last you for a while. If you want to have extra levels of preparedness, get some simple but decent water **filtration devices**, starting with things like a “Life Straw” or a manually operated filtration system. You can get them from camping stores or various online vendors / market places, like the one starting with "A". These typically filter out some pollutants, and at best some chemicals and pathogens, but few are 100% effective, so please make sure you understand what they can and cannot do, and how to address the gaps they leave.
In a pinch, you can also rig up a makeshift filter from a cut PET bottle, some charcoal, gravel, sand and cloth – not great, but better than nothing. For details on how to create makeshift ones, please read up on it yourself if interested so you don’t mess up important steps and end up with still heavily or even more contaminated water. Please be aware that usually these DIY filtration methods are not as reliable and good as professionally made systems, but if you have nothing else, every bit of filtration might make the difference between imperfect but hopefully reasonably safe drinking water and a very, very bad time ahead. Waterborn illnesses are still major sources of illness and even killers in disaster zones, so don't take chances with it if you are ever unfortunate enough to end up in such a situation.

These simple filtration systems are usually only a first step, because pathogens are usually not fully covered by them. If you want to be safe rather than sorry, always **boil water** before drinking if you can, to kill the vast majority of pathogens. For how to boil water properly, you can consult all kinds of online sources, starting with the WHO:
https://www.who.int/publications/i/item/WHO-FWC-WSH-15.02

For extra levels of preparedness, you could also use **bleach or iodine to disinfect water**, but please inform yourself very, very thoroughly how to do that, because getting it wrong can lead to unsafe water – either from remaining pathogens, or from too much bleach or iodine. Don’t do this without knowing what you are doing, from credible sources!

There are also **water purification tabs / drops** you can get. Some of them are close to foolproof as long as you follow the instructions, and if you want them for your emergency preparedness you can get those, toss them into your storage box for such supplies (and if you have one, your bug out bag), and have them as a quick-fix solution.
Be aware though that these tend to have a limited shelf life, even if often a fairly long one, so check from time to time if they are still good and safe to use. Don’t mess with these if they are beyond their date: They might still be perfectly fine to use, but you don't want to gamble on that when it comes to your drinking water – and thus your health. Only if you genuinely have nothing else – not even fire and a container to boil water – and are close to dying of thirst, would I consider using expired water purification tabs or drops, and only if you know they can't become dangerous past their expiration date.

If you can’t boil water due to lack of materials, there are low-tech methods called **solar water disinfection**. You can read up on how that works starting with Wikipedia, and if interested from there find other sources: https://en.wikipedia.org/wiki/Solar_water_disinfection

There are of course even more powerful filtration systems, which are usually also bigger and more for home use, and certainly more expensive and require more maintenance, so with those you are already going well into prepping territory, and thus it would go beyond the scope of this document.

Note that those handheld UV gadgets for purifying water can work okay (basically the high-tech version of solar water disinfection), but they come with rarely communicated limitations: They require batteries. They only work where the UV light they emit can actually reach the pathogens in the water. In proper setups they can replace boiling your water, but the chances for “user error” are very real. They are not reliable in unfiltered water where pathogens might be "shielded" by impurities. The device might malfunction without the user noticing. And a whole range of other (single) points of failure exist. So I consider them one of those "technically sound, practically questionable" gadgets which can work but at worst offer a false sense of security, while simpler, more reliable low-tech methods exist for little to no money. And of course they do nothing about chemical contamination.
Against pathogens, if you have no means of chemical disinfection at hand, just boil your preferably pre-filtered water properly with far fewer (single) points of failure, for which you just need a stove or an outdoor fire and a pot: bring it to a boil and keep it boiling for at least 1, preferably 5 minutes. See also: https://www.who.int/publications/i/item/9789241549950
https://www.epa.gov/ground-water-and-drinking-water/emergency-disinfection-drinking-water

Cooking (& boiling water / canned food)

What do you do if you want to cook or just boil water to disinfect it, maybe also boil canned food for safety reasons (especially if “only” pasteurized, see “Caveats about Botulism” for why)? If the electricity is down, or your oven decides to go to the great kitchen appliance afterlife, you need other ways to do this.

That’s why a cheap little layer of preparedness can be a **small camping stove** if you don't have one already, along with a few small propane bottles of the kind these stoves usually use. You can find decent ones at any camping store or online market places.
There is no need to spend a lot on something fancy, just make sure it's decent enough quality not to be a health hazard. Such a stove with one or two burners tends to be small enough that you can shove it somewhere dry – to avoid corrosion of its parts – together with the propane bottles (stored with proper safety precautions), and more or less forget about it. Maybe check it every couple of years to make sure it still works well and the propane bottles are still okay.
Be careful, though: Some such camping stoves are perfectly safe for indoor use; others absolutely are not. Check carefully before you buy one you might want to use indoors one day, so you don't end up with one that's a serious hazard if used inside.

Of course if you don’t know already how, you can also look up how to make a **simple open cooking fire**, but please never do that in your home, our modern homes are not made for that and you can very quickly cause a fire emergency on top of whatever emergency you're already dealing with, and most homes don't have the ventilation needed for it either. Campfires are only for outdoor use, period.

If you have a **BBQ grill outdoors** in your backyard or on your porch, you are probably covered in this regard anyway. Just think for a moment what this one needs: Charcoal? Propane? No matter what it is, always have enough “fuel” for it around, using the usual rotation of "one in use, one in reserve" (propane bottles, bags of coal).

If you have a **built-in open fireplace in your home**, that of course can double as your place to not just boil water but also your food, whether to make it safe to consume or to cook what needs cooking – rice, pasta, legumes, whatever. Please be really careful about this though, and inform yourself well about what you can safely do with your specific type of fireplace and what you can't, and what typical fire / injury hazards are. This can be reasonably safe, or very risky, depending on how you do it and the type of your fireplace, and what exactly you try to do there.

Maybe also have one **pot suited for open fires** – one you use in general but which is cheap enough that you won't mind if it gets roughed up by that camping stove, open fireplace, or whatever. No need to ruin your favorite pots in an emergency if you have something less precious for the job. Make sure it is a pot that can be used on open fires.
Of course you can get an according pot from a camping store or online vendor, or simply a cheap cooking pot from thrift stores or garage sales, as long as it's suited for gas stoves. Old fondue pots are really great for this, as they are literally made for being over open flames, and you can sometimes find them in thrift stores, garage sales and the like really cheap. Clean that pot thoroughly – and ideally disinfect it too, at least with vinegar and salt, and it can be used not just for your fondues if you like them, but also be your “emergency cooking pot”.

If you want some extra options and preparedness, there are also **camping coffee makers** you can use over open fires – useful not just for coffee addicts, but also for tea or hot cocoa, and handy for boiling and pouring water more easily than with a cooking pot. Some are even suitable to be used on a normal electric stove, and can then double as your normal way to boil hot water / make some tea, if you don’t prefer an electric kettle for that purpose.

Having a **thermos bottle** is also quite useful, not just for everyday life if you love your hot coffee or tea, and can make a larger amount in the morning to enjoy over the next few hours without needing more electricity, without needing more electricity. When the power is down, and you need to conserve what you have in fuel, or don’t want to light a fire for every single thing you need hot water for, you can simply boil a well-sized pot of hot water, pour that hot water into your thermos can, and have a nice supply of it throughout the day.

CAVEAT (again): If you ever have to do it, be careful and maybe look up beforehand how to properly and safely cook over an open fire, because there is a lot that can go wrong really fast when combining open flames and cooking, especially if you are inexperienced / lack some basic information & understanding. This is not a “legal disclaimer to cover my rear end”, I mean it. Burn injuries, house fires or heaven forbid wildfires that can destroy entire regions are nothing to joke about, anyone who has ever had to go through any of that will confirm, and it takes just one goddamn mistake – or simply not knowing any better – to lead to exactly that outcome. This is not to scare you, humans have used open flames since before our kind of humans even existed, but they also knew what they were doing, usually – or some paid a heavy price eventually.

Be aware what methods of open fire, be it a literal “campfire” (never indoors!!!), a small propane stove, a DIY rocket stove and whatnot, are really suitable for what environment, and where and how they are absolutely not safe for use. Never use any of these near where flammable or explosive items are stored. If you have fuel cans or dry firewood stashed in your garage, hopefully well-ventilated basement, or you have a room with oil tanks, it is not a good idea to start a fire (right next to them) there – in a worst case scenario you won't just have a bad time once, but quite possibly again shortly after – while explaining to whoever's in charge upstairs, or "the other place downstairs", how exactly you got there.

There are also **solar cookers**, but many are surprisingly pricey, in my opinion, and of course if you don’t have enough sun or the sun is too weak most of the year in your region, those are just expensive, fancy shelf queens for you, not really a good “preparedness item”. So unless you live in… I don’t know, the desert of Arizona or regions of Africa or southern Spain where you almost always have enough sun and heat from it, and "bad weather" doesn't just mean "overcast skies for a while", they are not really that great to have as an emergency item.

Anything beyond the above would get too big / complex for this document, like actually having a real, wood-burning iron stove / oven in your home with also a properly installed stovepipe.

Starting a fire / low tech illumination & heat

As we are on the topic of fire: Have something to **start fires** and for **low-tech illumination** that works also when the infrastructure has a major hiccup, plus the necessary supplies to also keep them going if you have the means and environment for it.

Of course I have to insert here the same disclaimer again, and just as above not as a “legal cover my rear end disclaimer”, but one to pay attention to: Be careful with open fires, be it a built-in open fireplace, "just" candles in your home, or an open fire outdoors where there is flammable material around. Never leave fire unattended – not even a single candle – unless you really really really know how to secure it safely. No one needs a wildfire or house on fire in general, and extra so when the kind of crisis is already happening that causes you to create an open cooking fire outdoors and light the night with candles not for romantic reasons. Be aware of how various materials act as fire hazards or flammable objects, good or bad for fire building and causing uncontrolled fires. And so on. You can read up on it online to get a good grasp if you don’t have it already.

Starting a fire can be anything from a couple of **lighters** – simple cheap throwaway ones or better, refillable ones – and maybe a spare bottle of lighter fluid if yours are the refillable kind, to (I recommend: always) having couple of boxes with **matches**, to more fancy things like **zippo-style lighters**. There are also camping / outdoor “fire starters” which use steel and flint or more commonly these days ferrocerium rods (often called magnesium fire starters), but you have to understand how to correctly use them and what for.
Note on matches: For some scenarios it can be helpful to have those boxes vacuum sealed. If you have the means of vacuum-packaging things in plastic bags yourself, of course you can also do that with some spare boxes of matches, and you have a fire-starting supply that could

potentially outlive you, while lighter fluid will eventually evaporate. Another option is at least to store them in a watertight zip-lock / resealing plastic bag, that way no moisture can get to the box, and you have dry matches when you need them. A suitable glass jar that is really watertight of course works as well.
An old trick for matches that will work even when things get wet: dip them – or at least their tips – in wax you melt for that purpose. When you need to use them, you can peel off the wax and have a dry match that works perfectly fine, as long as you have a suitable surface to strike it on.

Add some **tinder / fire starting material** to get a fire going, and you have what you need in this regard provided you have wood/coal, too. Store this fire-starting material somewhere in a dry, reasonable fire-proof container as a precaution, and of course away from anything where it could get really hot or where open flames could happen.
There are little blocks you can buy which are used for camping, outdoor activities and starting a wood-fired open fireplace / stove at home. These usually combine something that ignites quickly and easily (including binders or chemicals that don't evaporate fast), something that burns readily, and something that holds heat and burns a bit longer. Petroleum jelly + cotton balls or dryer lint also works pretty well. There are also lots of DIY “recipes” online you can look up and make such firestarters yourself from old things you probably have anyway or can easily get for free and/or cheaply, like leftover candle wax, egg cartons, old newspaper or other paper, cotton pads, dryer lint, sawdust, or even dried pine cones or orange peels. In a pinch though, all you need is some dry leaves and twigs and/or old newspaper – if you know how to properly build a fire and get it going, and hope it hasn't rained lately on that wood you gotta find ;^)

Fuel for fire: No, this is not about propane for your BBQ grill or camping stove, but about what to have on hand if you ever need to build an open fire. If you have a wood-burning fireplace at home, or a BBQ grill that uses charcoal but you start it with a bit of wood, I don't have to tell you about this – otherwise, maybe look up how to get a fire going and build and maintain one correctly, so you know in case you ever need it, it's really not that difficult as long as you understand a few basics.
If you have your own backyard with maybe a little shed, or another decent, dry storage space where they won’t take up valuable storage volume you need for other things, you can simply get yourself some **dual-use firewood / DIY wood** that burns well, but can also in a pinch be useful for all kinds of DIY projects, little repairs and so forth.
You don't have to go collecting wood in the forest or pay through the nose for it, if you can get some when a neighbor cuts down one of their trees. Old, broken pallets – which you might find near public dumpsters, or get by asking businesses that tend to have them lying around – also burn pretty well, as does scrap wood from construction sites; just always make sure to ask if it is okay to take it! Also make sure it hasn't been heavily treated or coated with chemicals, and be careful with laminated wood or particleboard – they often contain chemicals that are irritating or toxic to inhale, or that burn in unpredictable ways. If you are not sure with any scrap wood you got, simply take a chunk of it and light it, taking some basic precautions: outdoors on stone or concrete, with no flammable materials within reach of flying sparks or embers. If it burns as normal wood should, and there are no questionable smells, most likely – but not guaranteed! – this scrap wood is safe to use as firewood, and can double as your "emergency firewood / random DIY wood".

For illumination, have a stash of simple **household candles** and **tea lights**, and if you usually don't use candles just stash them away somewhere out of the way. Candles usually stay good for ages, so it's not something to worry about.
In theory you can even use a couple of tea lights to create a "**mini tea light heater**", depending on how you construct it, even suited to mildly heat a very small space, or usable for heating water with a suitable metal container over it, but please really inform yourself thoroughly on how to do that properly before you try. Enough people have caused fires, injuries, and worse to themselves or others by trying this method in an emergency without knowing what they were doing.
Of course also have **candleholders** or any other sufficient items available to safely place any household candles, as they could tip easily otherwise, and heat-resistant, fireproof surfaces for the tea lights, as they can get pretty hot. I will keep repeating myself about open fires – and that includes candles: do not leave them unattended, no matter how much you think they are safe. Most likely they are – but if they aren't, it might turn out to be one of the worst mistakes you ever made.

Another option is the **Beverage-can stove**, but please do not mess around with this unless you know what you are doing, either, as they can be safe for use or a real fire hazard really fast.

Reuse wax leftovers: I recommend you don't throw away all your leftover candle and tea light wax. For one, if you are careful, you can feed small chunks of it into already burning tea lights once their wax has become sufficiently liquid, and the tea light will keep going longer thanks to the extra fuel. Secondly, you can of course make extra candles from it, as long as you have wicks – or make your own, look it up if interested – a pot and heat to melt the wax, and molds, and/or fire-starting blocks with other materials .

There are also ways to make **DIY tin can stoves** from old tin cans with leftover wax and old cardboard rolled into them (or wood chippings). These things have been a blessing in many places of the world over time, from the trenches of the war in Ukraine as "trench candles" or "buddy burners", to camping enthusiasts who prefer to make and carry them instead of, or in addition to, other light and heat sources. There are resources online on how you make and use them, just please be careful: Messing up the pouring of hot wax can give you really bad wax burns.
Also please be careful if you make and use them: These DIY-tin-can-stoves in old tin cans get really, and I mean really hot when used. Always place them on a fireproof surface with no flammable materials nearby, and never touch them with your bare hands once they are really burning, or you will get the kind of nasty burns that can leave a mark for life. Additionally, once they are burning I do not recommend moving them around much anymore, as the burning material – and in premade ones, the wax between the cardboard – can slosh around, and if that wax sloshes onto you, you will very quickly understand why hot wax burns really really are a bad kind of experience.
These DIY emergency lights and stoves can give off a surprising amount of heat in a relatively small space, like a camping tent or small room (with proper precautions against the heat and fire, see above).

If you like them and would like to have one, see if you can get an **oil lamp** or three or however you deem sensible. Sometimes you can find pretty solid ones in garage sales, thrift stores and so forth. Just make sure they are really safe to use. There are plenty you can get seemingly cheap online but which are often absolutely not safe to use and of utterly crappy quality, some bordering on being a health hazard if used.
Oil lamps have been a source of illumination and warmth for millennia, and those properly built with a fuel tank below, a good length of wick, and a glass cover for the flame, can usually even be left unattended for a little while fairly safely, plus wind cannot extinguish them, and if well constructed the glass and other covering prevents them from belching soot, or at least captures it.
Add a couple of bottles of lamp oil, stored in a fire-resistant, well-sealing container (fumes can sometimes seep out of those bottles), and you have an old-fashioned, very effective source of illumination and warmth that has served many generations well – and will now serve you just as well for romantic BBQ evenings or cozy winter nights, and double as an emergency light source if ever – hopefully never – needed.
Depending on their construction, some oil lamps can burn various kinds of fuel without issue, but please inform yourself thoroughly before experimenting, or you might create a health and fire hazard for yourself and others, or at least ruin the lamp.

Anything beyond this mostly gets into really expensive / more advanced stuff, like dedicated wood- or coal-fired, semi-portable stoves that double as space heaters, propane / gasoline powered space heaters and the like. Please be careful with such "small" stoves: many are not suitable for indoor use, or are downright dangerous indoors – not only because of soot, but also risk serious smoke inhalation and, at worst, carbon monoxide poisoning. There is a reason why even the smallest old-fashioned cast-iron wood-burning stoves usually have some kind of chimney or stovepipe to funnel smoke and fumes out of the room, and even small tent stoves of this type usually have such a pipe for exactly that reason.
Some people swear by rocket stoves or even rocket mass heaters, but unless you really know what you are getting into and how to use one properly, they can still be a serious health and safety hazard indoors. Even clean-burning stoves still require proper use, risk awareness, and adequate ventilation, as well as careful handling of the fuel.

Electric Light & Power

The above old, low-tech means of illumination don't mean to skip on **flashlights**, which in my opinion everyone should have at least one or two of at home, even if just for looking under a dark shelf when something rolls under it, or if the light goes out at night and you have to check the breaker box. If a power outage happens or something even worse to the electricity grid, your flashlights are the safest and most handy method of illumination.
Most of course are battery-powered, so once the batteries are empty, there's no more light. That's why having at least one flashlight that can be hand powered with a crank is a good idea. Check from time to time whether the built-in rechargeable battery still works after powering it up with the hand crank: if not, it's time to replace this "emergency flashlight".

Personally I recommend always having at least one (or depending on your needs / preferences, several) flashlight(s) which are powered by normal AA / AAA batteries, so that you are not dependent on an internal battery that will one day absolutely go to battery heaven – because all batteries have a limited lifespan and number of charging cycles, and usually that internal battery can't be replaced. A mix between battery-powered and hand-crank+internal battery flashlights covers you in all directions quite well.
Always opt for LED lights over anything else if possible, as they use less power. These days they are pretty standard, but check just to be sure.

As mentioned, some flashlights have an internal battery and a **hand crank to recharge** it. Often they can also be recharged via USB. Some even have little built-in solar panels, although those usually do very little unless you live in a truly sun-kissed region. As an emergency flashlight they can be great, because even if you forgot to recharge everything, these will still work.
Small ones that can even be carried on a keychain can be had for as little as 5–10 bucks. Some even come in packages of 2–4 for that price, and personally I always have one of those in my handbag – rarely needed, but oh boy was I always glad to have that lightweight little thing with me when I really needed it.
If you want to be extra prepared, you can even get a pack of the small keychain ones pretty cheaply – half a dozen or so – and besides the one in your handbag or on your keychain, you can hang the others from doorknobs around your house: instant emergency light in every room!

Besides the classic flashlights there are also little handheld **lantern-style electric lights** you can easily set down anywhere but also carry around with a little handle, and hang them up in suitable places. The good ones can be surprisingly sturdy, lightweight, and for their size offer a lot of light. If you want a bit of extra general preparedness, or like to go camping / hiking, having one or some of these can be nice, since you don't have to improvise how to hold or prop up a classic flashlight, and your hands stay free. They can start at as little as 10-20 bucks, and you can just tuck them into your boxes of spare and emergency items.
There are also versions that come with a solar panel, and those can of course be great if you live in a region where the sun is strong enough for enough months of the year, and they can be nice to have sitting around in your backyard to just recharge, and provide nice, cheap illumination during normal times just as much as during emergencies. Of course, if you have "backyard thieves" in the neighborhood, I won't recommend leaving them outside unattended – for obvious reasons.
You can even get “mixed” versions that can be powered by AA or AAA batteries, but also have a small internal battery that can be recharged via USB or a hand crank, but of course they tend to be a bit more expensive. The hand crank of course is great for emergency situations.

You can also consider **puck lights**:Little disks of LED light, usually battery-powered (so you can just swap in rechargeable batteries endlessly), and can be stuck with an adhesive pad onto a variety of surfaces, or are magnetic (for metal surfaces). Cheap ones can cost as little as 1-2 bucks a piece, and you can slap them onto all kinds of places where you might occasionally need quick light during your normal life, like under the kitchen sink, on bookshelf boards, inside cupboards, you name it. If there is a power outage, these suddenly become extra good to have.

Either superfluous or really useful for hands-free portable light are **headband flashlights**, which are not just for miners or rescue workers. They are just an adjustable headband with a small flashlight attached. Usually they are battery powered, or have an internal battery to be recharged with USB. Mine has certainly been a blessing at times when doing repair work around the house in spots where light doesn't reach – even when the power wasn't out. Btw, depending on the design, they can also be worn like a necklace or even a wristband, depending on your needs.

A nifty and even beautiful trick for home illumination are **LED fairy lights / light-strips** (the latter usually with an adhesive strip on the back, and/or clamps to hold them wherever you like; some are best tucked into aluminum channels with a diffuser cover for the LEDs). These things also come in versions that can be powered via (rechargeable) batteries or USB, and can work well for ambient and general lighting.
For emergency situations and everyday life at once best are probably those that can be powered via both USB and batteries: Just have an adapter to plug them into a wall socket, and you can use them year-round as gentle but surprisingly effective and literally flexible illumination for your home, using relatively little power. During power outages or emergencies you can plug them into a power bank or similar devices that supply USB power, or use your rechargeable batteries, all depending on the situation and need. Especially when things are rough, the warm, calm – if you chose the right color – and diffuse light of some fairy lights or light strips can just make you feel cozier.
You can wrap fairy lights around shelf beams or even twigs and branches as decoration – including cut branches in a vase or other container, place them on surfaces, hang them from nails or hooks, or even make a "fairy light lamp" by arranging them inside a clear plastic container or glass jar, which gives off a surprisingly good amount of light in one spot. If you do the latter, please check how warm they can get when bundled together like that, and ensure the container and its surroundings can handle the heat.
Of course just like all LED lights, these have a limited “burn time” before they get dimmer or go defunct. Keep that in mind and if you like using them, maybe keep some spares in one of your general supplies boxes – they tend to go on sale right after Xmas, that's a good time to stock up. Some people – myself included – even use them year-round as their main source of light in the evening, saving on electricity while having very nice illumination.
Also be aware that old non-LED fairy lights give off significantly more heat than LED ones – all the more so if you bundle them together, like in a "fairy light lamp" in a clear container: At worst, that heat can become a real problem, like damaging the plastic coating, or worse. It's not likely, but yes, I speak from experience: it can happen.

There is also **phosphorescent(glow-in-the-dark) duct tape**. It doesn’t last forever, but the good quality tapes last a good long while. Of course the light it provides is minimal, and it only works if it was exposed to light for a sufficient time, basically “recharged”.
It can be placed on the edge of each stair step, next to the flashlight you have hanging from a doorknob or shelf, or on those damn corners and table edges you always bump into in the dark. Now you won't easily trip or stub your toe anymore, and more easily find that spare flashlight hanging somewhere, even in the dark. Outlining doorways with just a few strips in strategic places, like next to the door handle or knob, can of course also help with orientation in the dark.

Alternatively there is also **phosphorescent paint** you can apply to all kinds of surfaces (not food-safe, of course), and thus find them easier in the dark. Just like the tape version, it won't keep glowing forever after light exposure, and will need to be reapplied eventually. Keep that in mind if you consider this option.
In case you don't know how this works: these materials store light when exposed to it, then slowly release it – which is what makes them glow in the dark. Depending on the quality, it can be such a faint glow for just an hour or two that those types are all but worthless except for decoration. Better ones can last through almost an entire night if sufficiently "light-charged" beforehand. For spaces like a basement where the light is rarely on, this is not a good solution for orientation, while any room with sufficient natural daylight usually provides more than enough charge.
Side note: In case you don’t know, our eyes adapt slowly to the dark. So if the light suddenly goes out and you don't have to react immediately – and have no flashlight handy either – give yourself a little time: Your eyes will adapt, and depending on how good your natural night vision is, you can absolutely make out faint contours from the fluorescent tape you placed in strategic spots – and it doesn't even need to be that much .

If you have a backyard, consider **solar powered garden / outdoor lights**. Some of those are by now not really more expensive than the ones you power from the grid, and they can last you as long as some of the electrically-powered ones, which sooner or later will also break down on you. Even if they are a little more expensive, the solar-powered versions will potentially save you enough in electricity costs – if you use them enough – that the difference is made up by those savings. Of course they have the massive benefit of providing illumination outdoors even when the power is down, and not needing any connection to the power grid – you can place them wherever you like. They come as ones you can just stick into the ground, or hang from branches, nails, hooks, shelves, you name it .
Just as I mentioned with the lantern-style LED lights that can also come with a small solar panel: Of course if you have “backyard thieves”, I won’t recommend these types of solar powered outdoor lights unless you can somehow secure them, because some people really will steal everything that isn't bolted down or otherwise secured – including, as I once heard an American put it, "with pew pews and pitbulls" ;^)
If you live in a region where the sun doesn’t have much power most of the year, just like all smaller solar panels, these will sadly not provide enough energy to really power the lights for long – if at all – or only during the height of summer. Before you invest in any of these, maybe first look into how well they actually work in your part of the world.

There are also **rechargeable light bulbs**. They look like normal light bulbs and can be screwed into normal fittings, but they don't need to be. There is a battery inside of the bulb, which can be recharged (usually via USB), and keeps them going for a few hours on a charge. Some come with extra functions, like a remote control, different settings and so forth.
If there is a power outage, you can screw them into normal sockets to create a bit of a sense of normalcy, and of course have a convenient source of light as you are used to, or even use them as an impromptu wide-angle flashlight, since you can switch them on and off while holding them – and as LED lights they do not, or should not, get meaningfully hot (please do check, and don't just take my word for it).

As an emergency light, or for a place where you can't get electricity to, but would like to have a lightbulb, they can be pretty useful. They often also come with little socket hangers: you screw the socket in, and hang the bulb from the hook wherever you like.
In a pack of half a dozen to a dozen, decent ones run probably around 25–50 bucks or so, and of course the battery inside of them will not last forever, as with all batteries.

Having **rechargeable batteries** for your flashlights and just generally might also be a good idea, together with a suitable battery charger, and maybe a spare – these things last forever if well made, but the last thing you need is your only charger breaking down when you really need it and can't get a quick replacement. Even if you have only intermittent electricity, that's when you recharge your batteries. Otherwise you need to stash extra normal batteries, but be aware they have a limited shelf life: stashing a lot that you never use is an utter waste of money and materials.

For **battery rechargers** I recommend getting one that can be powered via USB, along with a USB-to-wall-socket adapter, if the charger doesn't already come with one. That way you can usually plug the charger into a wall socket, but if you have a power bank or even a small portable solar panel with only USB outputs, you can connect those to your charger as well.

There are also simple handheld, universal, non-electric **battery testers** for AA / AAA / C / D which go for as little as 5 bucks or less. They can be handy for quickly checking your entire stash of rechargeable batteries, and getting a general sense of how well charged they really are, without having to shove them all into a flashlight and still not knowing the real charging level. I tend to do this during my yearly "pantry & supplies audit".

Power banks are either completely superfluous for you, or a must-have of emergency preparedness as well as "hiccup preparedness", if you care about being able to use your smartphone or tablet even when the power goes down. This isn't just about days of power outage: You might have forgotten to recharge your device, and if a power outage happens on top of that you are hosed – unless you always have a power bank sitting around. Some devices can also be powered directly from a power bank, even while charging.
Small power banks can go for as little as 20-30 bucks these days, and some even come with emergency hand cranks and/or little solar panels. Don't expect much from these small solar panels though – if you live in a region where the sun doesn't deliver much power, they border on useless. Of course, if you got yourself one of those emergency radio + flashlight + power bank combos (see below), you have all three covered in one device.
If you have flashlights, other lights or battery rechargers which can be recharged via USB, power banks can become extra useful during power outages, to have that extra bit of power to recharge or run those, of course.

There are also larger power banks powerful enough to temporarily give your laptop some extra runtime, if you really need it when the power is down. Having a **spare battery for your smartphone & laptop** can be either superfluous or an extra layer of preparedness if you need them a lot and the built-in one breaks down, you forgot to recharge it, or the power goes down.

Be aware though that just like rechargeable batteries, these batteries have a limited lifespan even if you don't use them, as well as a limited number of charge cycles, even if counted in the hundreds, really good ones even up to a thousand before their capacity degrades. So YMMV on whether it makes sense to have one, just stick with a more universal power bank, or have both. For my own part, I can confirm there were times in my life when the 2nd battery for my laptop was a blessing, and other times when it was utterly superfluous and eventually degraded into uselessness in its storage box.

Don’t forget to recharge! If you rarely use the rechargeable batteries, power banks and spare batteries for devices in your stash, or are not very good at rotating them in use, go through them at least once a year to ensure they are all fully charged and ready to go. All of them can lose power over time even if just sitting around unused, and it really sucks if you need to swap out a battery or recharge your smartphone, only to find your stored power is depleted. You can make it a routine part of something you do yearly anyway, like your spring clean when you also go through your pantry to check for anything that might have gone bad, or that you somehow forgot to restock as you usually would.

If you do not keep your power bank full at all times, it does nothing for you when there is a sudden, unexpected power outage, or when you forgot to recharge both your smartphone and your power bank. Therefore I recommend always having a specific spot where you store your power bank(s), close to where you can also recharge them, and if you use it, always recharge it before it goes back into storage. If you use a power bank anyway fairly often, always place it back after use and connect it to the charging cable, just as you would with your smartphone.

For those who tend to forget charging their phone and power bank: Do not leave these items lying around everywhere, always place them back in a specific spot set aside for that, where you also hook them up to the charging cable. If you like having your smartphone next to you most of the time, make the “resting place” of your smartphone a suitable spot where you spend most of your day, no matter whether that’s your computer desk, your couch or your kitchen. Have the charger set up there, and plug your phone in when not in use. Of course this only works for those who do not move around a lot during the day. This is just a trick that can help with habit-forming, and thus becoming less forgetful about recharging: Anything you do consistently for a month or two tends to become a habit that sticks.

If you live in a region where you usually get enough sun hours of sufficient power, you can even go one step further and consider getting a **small portable solar panel** of the kind usually designed for outdoor use, which need no real technical setup and come with USB ports. Plug in your smartphone, power bank and battery recharger, and you won't need to draw power from the electricity grid to keep things charged, as long as you get enough sunlight during the day (and in some regions of the world that is a big if).
This can be a nice-to-have but not a big money saver in normal life, but very useful as another layer of preparedness in case you deal with power outages from time to time, or want to prepare for longer outages after natural disasters.

Be aware that there are a lot of "Temu-grade" solar panels on the market that will break down on you fast, or simply won't do much unless you are sitting in the middle of a desert with full sun, so try to make sure you are not wasting money on tech-trash. If you can find one for less than a hundred bucks that works well for your needs, great, but don't expect that. At this price range you can get something sufficient for recharging batteries, maybe your smartphone and a small power bank, but don't expect anything beyond that – that's pretty much the use case they are made for. Anything more powerful is usually also bigger and requires more technical setup.

There are also **emergency radio / flashlight combinations**, which combine a pretty solid, powerful flashlight with a radio – in real emergencies, radio transmission might be the only thing still working, and becomes your source for news and broadcast warnings – and are either battery-powered or come with a built-in **powerbank** for extra power storage not just for the flashlight and radio, but also to charge your smartphone and similar devices.
Many of these also come with a small solar panel and a hand crank, so that if the power is totally down and the power bank is empty, you still have a way to power your emergency radio / flashlight. I always recommend the types with a hand crank, and most of that type nowadays also come with a solar panel. Please be aware though that those usually tiny solar panels do little to nothing in most regions of the world in winter, relative to what a power bank, radio, and flashlight actually require, or if you live in a region where the sun simply doesn't deliver much power most of the year. Also don't get ones that look so flimsy – especially the hand crank – that you have good reason to believe they will break down on you when seriously needed: most likely they will.
Some also have other fancy features, most of which you probably won't need – but if you find one useful and the device isn't that much more expensive than the many others in this class, why not. Of course as always, if you want to be extra-well prepared, have at least two – as with anything that might be critical – so that if one suddenly fails you, the spare can still serve you well while you eventually replace the defunct one.
Sometimes you can find older models on sale – ones with power bank capacities that are "too small" by current standards, as batteries keep improving. As your "spare", those can still work perfectly well, and that way you can even get 2–3 cheaper, smaller combo devices to have around the house.

Something many people forget: **Spare power cords & USB cables**. I have lost track of how often someone sheepishly asked if I might have a spare, or I offered one when theirs had just given up the ghost. Having just a handful of extension cords, power cords, USB cables and adapters for wall sockets in a small box stashed away can save you a lot of headaches occasionally, and get a replacement later at your leisure rather than scrambling for one right away.

Larger power banks and portable batteries are significantly more expensive, you can easily put down a few hundred bucks even for the smaller ones, and from there it quickly scales up into big, bulky things to keep even your kitchen appliances running for a day or two, with usually around 1,000-3,000 Wh of storage capacity, the ability to be recharged in various ways, and different types of outputs – most importantly the same as wall sockets, not just USB – all for the "low" cost of a four-digit number or more.

Usually you can also hook them up to sufficiently large solar panels or an **electric generator**, which also tend to start at a few hundred bucks, and of course you need to store the right kind of fuel – gasoline or propane, some can do both – and have a place where you can store and operate them safely. Remember, fuel-powered generators are usually not safe for indoor use due to their exhaust!
I won't go deeper into the topic of these types, as this is entering really serious emergency preparedness. Just know they exist if you are interested.
If you are, or have family members who depend on devices that require electric power, like certain types of ventilators, and you want to be prepared for power outages, this hefty expense might be very much worth it if your budget allows. Otherwise it is more something for people who want to weather power outages without "oh well, I guess we gonna do without power for a while, and eat what's in the fridge first". The exception to this: If you live in an area where power outages are more common (and in some parts of the world the power infrastructure is getting worse, not better, as of 2026), and if you have the money for any of these temporary power supplies, it might be a worthy investment, especially if you suspect you might use it quite a few times over time. Their main use case is being able to power at least your fridge and freezer, so the food won't go bad before the power is back, with maybe a bit of extra wiggle room on top for a quick check of your emails, and maybe even the sudden luxury of an efficient electric kettle or whatever you would prefer over the low-tech alternatives (especially if you also have solar panels sufficient for at least some recharging, or enough fuel stored away for the generator). So once more: YMMV.

Anything beyond this mostly gets into more complex and / or expensive territory, like larger, stationary battery and rooftop solar panel setups for your home, or even more advanced and expensive setups for people who want to go partially or fully off the grid.

Toilet needs

The sometimes most literally urgent business is what comes out of you: **Toilet needs**. If you have a backyard and shovel, you have the means to get rid of what comes out of your lower half. This is only a short, temporary solution, as eventually you end up with a field of human feces and urine. There is a reason why people in the past had outhouses and didn't just dig shallow holes everywhere
Don't build your own makeshift outhouse unless you know what you are doing – messing with the local groundwater is not okay, to put it mildly, especially when things are already at the level of "we have to figure something out…"!.

For your **urine**, as long as you have a gutter / gully in front of your home, or a backyard, you have a way to get rid of it. If you have neither outside your home I wonder where you live, and you have to figure that out yourself I fear, or use the methods below also for that.
It might be (is!) a true horror story that at some places employees are forced to pee in bottles at work because they aren't allowed bathroom breaks – but for emergencies at home (no water to flush, clogged toilet waiting for the fix), any container you can easily pee into and carry without a big mess will do.

Ladies, I am speaking from experience: Unless you need to discreetly carry it around in your handbag, you don't need those fancy "portable lady urinals". Any **empty tin can** you're no longer using for anything else works fine as your emergency "portable urinal", and with it you can relieve yourself just as cleanly as the gents with their "built-in aiming device" ;^) Extra bonus if you opened it with one of those can openers that don't leave any sharp edges, as you can safely get it as close to the "point of origin" as needed without worrying about sharp edges on sensitive parts.
The tin can method also makes it easier to dilute the urine with enough water to turn it from something that can kill plants into actually being fertilizer for them as you get rid of it in your backyard or any other suitable outdoor place. For the gully that's of course not really needed.

If you live in a city / town area without a yard, for general preparedness if water & sewage are not working, have two things stashed away somewhere out of the way, hoping you never need them: A cheap **bag of cat litter** (if you don't have those for your cats anyway). What works for cats works for humans, too ;^) With it all you need is a suitable sized **bucket**, some **waterproof trash bags** in which you place a handful or five (depending on how big you're gonna go) of cat litter, place bag in bucket, and ta-da, the bucket is your makeshift toilet for "the solid ones".
If you have no cat litter, in a pinch saw dust or even just soil works as well. Either way, simply put some on the bottom of the bag, and sprinkle some more onto your feces after you are "done with business" to prevent the smell from getting too bad real fast. If you want to keep bacteria at bay as well, pour a bit of disinfectant like alcohol or diluted bleach over it as well. You can use one bag several times that way, and how much you can stand is up to you, just as it depends on how many trash bags you have and how long you suspect the emergency situation will last before you can get new ones.
Maybe have a wooden board you can place over the bucket so you don't have to rinse it if water is not widely available (which is likely in that kind of scenario). Instead of a bucket as your makeshift toilet are also **plastic folding toilets** that don't cost a lot and can double as a simple stool if you sit on the lid – just make sure the thing is sturdy enough you can really do so without it breaking down underneath you after a few rounds. **Porta potties** are another option.

Of course you can also **turn your normal toilet bowl into a makeshift porta-potty** without the portable part: Make sure as much water has drained from it as possible (if needed by hand), then use any kind of trash bag of sufficient size that is waterproof. Fit it into the toilet bowl and slide it over the rim, just like you would over the rim of a trash can, and duct-tape it to the rim. There you are, peeing / pooping into a bag with the comfort of your own toilet.
I would not recommend peeing into it though if you can instead just do so in an old tin can to dispose into the gutter, or in a backyard or whatever (see above), as you'd end up handling far more waste in those trash bags if you use them for urinating too.
There are also inexpensive so-called "**urine hats**" or urinal hats which fit easily into the front part of toilet bowls, usually used in hospitals to collect urine from patients that way. If you want one for your emergency supplies, you can get it for very little and store it away somewhere, it might even work as a container for other emergency supplies until you need them. Then just dispose of the urine captured in the urine hat in the gutter / gully or any suitable outdoor area where the urine won't cause problems.

For both the “bucket method” and the “toilet bowl becomes porta-potty”, you can also keep the bad odors even a bit more in check (besides wooden board / toilet lid over them) by spreading a large trash bag or something similar over them as best you can, to contain the air – and with it the odors – in that small, semi-contained space.
There are also special powders one can get, usually used for camping, that both reduce odors and kill bacteria. If you want that in your “emergency preparedness supplies”, you can of course add that and e.g. store it in the urine hat right away, or any other container of your supplies for emergencies.

Be it a bucket or toilet bowl turned into immobile temporary porta-potty, make sure you really seal those trash bags with their icky stinky content very well: Knot them really tight, maybe even use a bit of duct tape. You can use the bucket also to transport these trash bags without having to handle them more than needed. Depending on your situation you can just collect them in a space where the odors and potential bacteria will be the least of a problem, ranging from "sadly, I have nothing but the municipal trash can" to burning them in a reasonably safe place. If you're using biodegradable bags rather than regular ones you can of course also bury them somewhere, just make sure it's not somewhere you or someone else might dig them up accidentally, and not close to any kind of water supply where the bacteria in them could contaminate the water.
Please, if you are ever in that kind of situation, think thoroughly about what you are doing with these bags, because they can cause a huge mess or at worst a health hazard for you or others if you dispose of them in a bad way. Careless handling of fecal matter has caused enough health problems and even deaths throughout human history.

Anything beyond this would get far more complex, not necessarily like literally creating an outhouse, but at least getting some kind of “outhouse camping tent” together with a more fancy and expensive portable camping toilet, more bags, special disinfectant fluids and so forth. You can look it up online, or ask your local camping store. The step beyond that would be already going into “own backyard, own septic tank” territory.

Other useful things

Now we get to the **bucket of useful things** which can be handy in everyday life, and extra handy in all kinds of emergency situations. Some of them I already listed under “Consumables & Household items”, which can cover a lot of situations if you are creative enough.
The following list is by no means exhaustive, it is a starting point. Also keep in mind your own level of physical ability, mental capacity, and real living situation and potential changes to it. For someone with limited mobility and can’t carry more than a few pounds, getting a large, heavy backpack as a bug-out bag makes no sense. For such a person a light, easy to strap on, comfortable smaller handbag with a long, adjustable shoulder strap that can carry a few things while keeping the hands free is far more useful in daily life and in emergencies.

Typical things that can come in handy are:

- **Blankets**. These are not just potential real life savers if heating is down in winter, they can also be used as improvised methods of carrying loose things (or if sturdy enough, even a person), to create makeshift flexible barriers (wind, if impregnated also rain up to a point, or even to make a makeshift “indoor tent” where the heat gets trapped better than a larger room, and so you don’t have to heat the entire room, just your “makeshift tent”).
  Once they are ratty they can be cut to pieces for anything from “rags that get thrown away eventually” to small soft thick bags for other items to “soft cover for baskets and open boxes”. Just hem the pieces you cut from them, and these old blankets get a new life for a variety of things.
  Of course **sleeping bags** also belong into this category, and some are even shaped in ways they can also function well as blankets at the same time. They come in different qualities not just in how well they last and how comfy they are, but also how warm they keep you, ranging from barely warmer than a thin blanket to so well insulated you could sleep comfortably in them in all but a blizzard.
  Be careful though: Many blankets these days are made from polyester or other synthetic materials which burn horribly easily and quickly under the wrong conditions, and with horrible results (melting synthetics can be extremely dangerous). If you can, rather opt for natural fibers, and look up the actual properties of whatever fibers you are choosing.
  Furthermore, if you suspect your blanket(s) could get seriously stained (children and pets or other issues), natural fibers like cotton usually can be hot-washed with no issue, while synthetic fibers usually mean you have to throw this blanket away, or work with some very serious disinfectants and other methods suitable to clean such badly stained blankets.
  Wool is surprisingly resistant to burning and depending on how it was treated is naturally somewhat water resistant. Of course with woolen blankets you have to make sure they don’t become a haven for moths. Putting a few drops of essential oil that moths hate on your wool blankets can keep these bugs at bay, but you'll need to reapply it from time to time. Typical oils used for this are lavender, cedarwood, and some also report good results with mint or lemon(grass), clove or cinnamon. Simply use the scent you like most and see how it works for you.
  Note that you cannot hot-wash wool, so if it gets really badly stained or contaminated, that's most likely the end of that blanket. If you don’t know how, inform yourself how to properly wash wool, as it has different dos and don'ts than cotton, linen, or synthetic fibers.
  You can get blankets at times also really cheaply in second hand stores, at flea markets or from garage sales, but of course you have to really thoroughly wash them, and depending on their origin maybe also disinfect them. Depending on how much you would need disinfectant, the lower price for such second hand blankets might make them still not worth it. That’s also why those blankets you can hot-wash are preferable.
- **A bucket** or even several, especially if they fit into each other so you have different sizes for different uses without wasting space. You can simply store some of your cleaning supplies in the bucket(s) when not in use. During normal life they are just part of your cleaning supplies, and occasionally useful for carrying things around.

Most people do not realize how important a bucket can become during emergencies: You can carry water (and other things) in it like our ancestors did, wash clothes with water & soap, you can relieve yourself in it (see under “Toilet needs”), and if it is really, really clean (not used to relieve yourself, no chemical residue) and made of fire-safe metal, you can in a total emergency in theory even boil water in it. Be aware though that most likely such a metal bucket is not food grade material, so I don’t recommend it for drinking water. There are also “folding buckets” made from plastics which are not as sturdy and of course not as easy to use for your “toilet needs”, but which store away needing very little space.
Alternatively or additionally you can also get a **collapsible foot bath basin**. These fold together and can be stored very neatly under shelves or other little gaps you have in your home, double there as storage boxes. When needed, and if they have a handle (most do), you can use them as a container to easily carry loose goods around, from doubling as your little laundry basket to your groceries, making them "another bucket & basket in one" – besides being a perfectly fine foot bath. In an emergency they can double as a bucket to carry drinking water (if you keep them properly clean of course after giving yourself a nice foot bath in it!), and of course also otherwise for all kinds of purposes.

- **Coolers**, yes those cooler boxes like used for camping or picnics, can also be pretty handy for more than just that. Usually they will serve you for outings, but if your fridge and/or freezer or the power goes down, you can place the most sensitive food in there, preferably a few things from the freezer together with a few from the fridge, and the former will keep the other cold for a little while longer. It’s not a solution, but buying you time.
  When not used for outings or as an emergency cooling container, you can use these cooler boxes elsewhere in your home as storage containers, just make sure you don't store anything in ways that could damage the lining, and with it the cooling capacity.
- **Large trash bags**, preferably really sturdy ones. You can of course use them as just that, trash bags, including if for some reason trash collection doesn’t happen for a while to collect your smaller trash bags in them, and thus keep them a bit more “contained”. You can also cut them easily to size to have sheets of plastic to cover things against wind, water and even light, or for DIY projects where something could get soiled. Even just partially cut open they also make great covers for things you store in your basement or garden shed, if you want to reduce how dusty and dirty they get over time in such storage spaces. Plus of course you can also store things in them in said storage spaces. Large trash bags are not just for trash ;^)
- **A small sewing kit**: Even if you have no clue about proper sewing, having a simple small sewing kit makes it possible to quickly sew on a snapped button or sew together a tear in your clothes. It’s better than nothing, and if you deem the tear and your handiwork with a sewing needle too bad to still wear this piece of clothing “while being properly dressed”, you can keep it as “workclothes”, to be worn when most likely the clothes you wear will get so soiled they are beyond saving in this regard. Furthermore you can also turn old, ratty clothes, bedding etc. into anything from small cloth bags to textile wipes and rags, as mentioned earlier.

Having a little sewing kit can also come in handy if you quickly want / need to improvise something else from some old bedding, kitchen towel, you name it. One does not have to be a sewing pro, a few simple, even very uneven stitches can do the job just fine for such things.

- A decent, not too small and sturdy **fixed blade and/or pocket knife**. Nothing fancy with a lot of tools, but also nothing flimsy with all of it breaking apart fast if you ever need to use it for real. Just get a sturdy enough, sharp blade good enough to cut anything from fruits and veggies to some paper, some rope, or even small twigs, and maybe serve as a multifunctional tool – including to improvise other tools, or in a pinch pry some smaller things open.
    - Decide yourself if one of those fancy **multitools** is worth your money, and what type. I absolutely love my small keychain type, sitting in my handbag as a 6-in-1 mini needle nose plier, wire strippers, (mini) knife, file, Phillips & flat-head screwdriver. Those 5 bucks invested have been so worth it so many times over the years. The fancy big one with over a dozen functions I once got gifted sits in a box and so far has seen very little use, handy as it was the very few times while I had it in my car, or later when I grabbed it quickly from its storage box rather than just pulling out my toolbox for some proper tools. There was a time in my life before I got it gifted though when this thing would've been damn handy ever so often. YMMV, of course.
- A **decent minimal toolbox** with tools you can and know how to use for a variety of things, from little household repairs to DIY projects, and which often can also serve in improvised ways as needed. You don't need to be a DIY pro to get good use out of them once you get started. Based on practical experience of what gets used the most:
  If you have none yet, start simple with just a reasonably sized **hammer**, some **pliers / cutters**, maybe a little **wood saw** if you might work with wood here and there, and two or three **screwdrivers**: One flat-head, one Phillips-head, both for the most common size of screws and sturdy enough to also be used as little "mini-crowbars". The third one can be the type with a selection of bits of most commonly encountered screw sizes and -shapes. If you want to do a bit of simple quick fix plumbing, add an **adjustable wrench**. A flexible **measuring tape** is also good to have. Most other things that might be useful for repairs & DIY projects are already covered elsewhere as also useful for other things. Even with doing some household repairs myself, building & repairing computers, and making (small) furniture up to the size of computer desks or low shelves, I have rarely ever needed more than these functions / types of tools, plus a few wrenches, files, drills, sandpaper, and different sized / power tool versions of the above.
  Anything beyond that depends on what you might really be capable and interested in doing, and you should be able to figure out yourself. The things I mentioned though are the most commonly used in simple household repair and DIY things, and even if you never did them before, one day you might be willing or forced to do them, and will be glad to have these simple tools which don't have to cost a ton. Just make sure you don't get things so flimsy you can easily imagine how they will break down on you if ever really used.

    - A word on **power tools**: They are great. All of us who do a bit more serious DIY, nevermind serious craftsfolk, don't want to miss them. But they are utterly useless during a power outage. So have the tools you might need in particular during those times in versions that do not require power, while they can also still serve you well for smaller tasks where a power tool isn't as important to have or too bulky anyway. Consider power tools as "extra", a luxury you enjoy to have if you really get good use out of them, but not something you count for the kind of things we are talking about here. An exception are things that do not need electricity but are fuel-driven (and you have enough fuel, like some chainsaws), or have the means to power them anyway – but in that case you are most likely anyway not someone who needs most or any of the information in this section, or also some others if not all ;^)
- At least a small **box of nails and screws**, maybe also dowels if you also have the means to drill holes, be it with a hand drill or power drill. Nothing too fancy, just a small selection which if you need or want to quickly nail or screw something together, you have it at hand, together with the aforementioned minimal toolbox.
- **Some lengths of wire and sturdy but not too thick rope**: No need to get spendy special paracord unless you want to, check your local DIY store. Simple garden wire can also be enough for most things, maybe twisted together for extra strength if you need it to withstand extra strain or weight. Both wire and rope (not too thick) are multipurpose items to tie things together, create a quick fix, secure something, and a lot of improvised things even to the point of an emergency splint with some suitable pieces of wood – which you hopefully would never need. Remember to also have whatever is needed to cut those things. Garden wire often comes with a clipper attached to the box.
- A few **carabiner hooks**, which btw work also great as keychains. Don't get any hooks of questionable quality that might break when you really need them and something important depends on it. They are very useful together with the aforementioned rope or even wire, but also can help to secure all kinds of other things if you are creative enough.
- **WD-40** or a similar type of oil which can act as lubricant, rust preventive, penetrant and moisture displacer all in one. Decide yourself whether one can or better one in use, one spare makes more sense for your supply-keeping, if any at all. Between some wire, some duct tape, a hammer and some WD-40, you can fix a lot of little "mechanical problems" in life ;^)
- At least **one set of utilitarian clothes** that is sturdy and good in all kinds of weather, or at least as many as possible. People who never had to handle anything beyond their cozy homes and jobs that require little from their clothes have no idea how important proper clothes can be in some situations.
  This is not merely your "crisis wardrobe", these are comfy clothes you can wear anyway as "sturdy casual" or part of your normal wardrobe, just with an eye on how they can also serve you well when the weather is bad and you have to be outdoors, even just briefly, or if you have to do something that might tear or damage your softer, lighter clothes. Knowing that you have a set of very comfortable clothes in which you could, if needed, also wear nonstop for a long time, safe and comfy while having to handle

rougher things, can be peace of mind. If you wear these boots, pants and shirts just as the coats and gloves anyway in your normal life from time to time, it also won't feel like a "crisis" then, nor if you ever have to wear them when a light or more severe crisis hits. So for your emergency preparedness, but also as something very handy to have for all kinds of other non-crisis situations, consider:

    - Some sturdy, waterproof or easily impregnated **boots** preferably a bit larger and with shoelaces, so you can wear thick socks in them or just as well very thin ones or even barefeet, depending on the temperatures
    - Proper **socks** for those boots (and a second pair at least for switching, wearing wet socks is horrible!)
    - Some **sturdy pants**: There are work pants which look pretty good, are at least partially water resistant, breathable, and also have nice extra pockets, while they don't cost a fortune for something that potentially can last you a lifetime if you are not wearing them down at an according demanding job fast
    - Some **shirts** / **sweatshirts** you feel comfy in and which won't rip at the smallest strain, and can potentially be worn layered in colder weather for more warmth.
    - A good **rain jacket** with a hood, which covers you well, preferably a bit larger so you can wear more than one layer under it, or even a thick sweater when it gets colder.
    - A good, waterproof **winter coat** of course is also highly recommended, as needed and suitable for the kind of winters you experience, and to stay outdoor in it for a good long while, together with a pair of waterproof **warm gloves**, a **warm cap** (bonus if waterproof), and a good, easy to wash, warm, long **scarf** you could in a pinch even use to cover part of your face and/or your head.
- Some kind of **backpack** or **larger handbag** with a long, adjustable, comfy shoulder strap (to be worn also safely across your torso if needed), suited to your capabilities and potential needs. Or even both, if you prefer. It can be used to just store things at your home that should be kept together, and thus not take up unnecessary space, unless it's already your usual "daybag" you use to carry personal items around when out and about. If not your "daybag" it can even serve as your bug-out-bag if ever (hopefully never) needed. It should be at least water resistant if not reasonably waterproof at least against rain and brief immersion, and of sturdy material that can withstand a bit of strain. Whether you need to more easily carry something around hands-free inside the house and around your backyard, to more easily (as a backpack) haul your groceries home, and of course use it also when travelling, having something like these two items can always come in handy if you don't have them yet. Again, check second hand and thrift stores or offers, sometimes you can get good ones that way for very little.
- A **tent or tarp** goes a significant step further into the direction of real "emergency preparedness". These things are not just useful for camping, or if you have children to have fun with in your backyard. During a power & heating outage in winter you can set it up indoors, and tarps are even more flexible in this regard. Any heat (including body heat) will get trapped inside the smaller enclosed space of the tent to a degree, and thus you need to heat less air and space to stay warm. Of course please be very careful if you heat such a tent with any means that involve open fire, even "just" some of the DIY

quick options one has like to create a mini-stove/oven just from tea lights and a bit of the right ceramic utensils (flower pots & drip trays plus a few extra pieces). Fire hazards are a very real thing, especially small spaces.
You can also create these types of "**makeshift tents**" in an emergency simply from spare blankets (and/or a tarp) you might have, or any other kind of suitable material: From cardboard and large trash bags to any tarpaulin-like cover with then maybe some blankets over those for extra warmth, as long as you have a way to secure them in place (which is where things like those carabiner hooks, nails, rope, string, duct tape etc. come in handy), you can create a makeshift tent inside your home.

- **Books**. Old-fashioned, "dead trees" books made from paper. If the power is down, if the internet is down, if you are sheltering in place, a good book can be your companion to stay calm and cozy while you enjoy the contents of your pantry. Furthermore, books that contain useful or important information to look up can be a blessing when you really need it but the internet is down.
  You don't need a giant library (unless you want to, I totally get it, I must have been a librarian in ancient Alexandria in a past life or something). Just get a nice selection of books you love and could read time and time again, and of really useful books with information good to have: Cookbooks, about food preservation, basic household and other relevant repairs, gardening & nature, first aid and home remedies, household tricks, general reference books / books of facts, things like these.
  You can check thrift stores and 2nd hand bookstores (including online), where you can often get books like these very cheaply. Some towns and cities in some regions also have "public book shelves", where you can leave books you don't need anymore, and take new ones with you which look interesting, all based on an honor system – part of the emerging "sharing economy".
  Related to this, **any information you find really really useful** but only have it in digital form, yet might need it when power is down: **Print it out** , as long as it's not too much (then check if you can find it cheaper as a physical book), put it in a binder, and store it away. Cooking recipes, lists with things like shelf life / nutritional facts / preparation methods, great ideas and explanations how to make useful things – print them out and a power outage won't keep you and that information apart.
- Enough **things for your hobbies** to last you a while. Be it knitting, painting, whatever you do anyway to entertain yourself in your spare time, have enough to last you a while. This way you won't run out of things, and you also have enough in case there are supply disruptions, temporary price increases (or a cushion against permanent ones), or of course if you can't get more for a while during a crisis, yet will be glad to take your mind off things by distracting yourself with your hobby. For things that don't use up materials but require "tools that can break or get lost", have a spare or two – like some spare knitting needles or spare brushes – so that if yours gets damaged or lost, you are not left without. If you and your family love to play some card or board game, think if it makes sense for you to get a cheap simple spare in case something happens to the one usually used, although that's usually less likely. Again, sometimes you can find these items cheaper via thrift / 2nd hand stores & offers from online places.

Creative (problem solving) tools & materials

I mentioned some of these things before, here they just become a condensed list and bundled with other things all for the same purpose. I list here just some of the most commonly used / useful ones, and you might come up with your very own ideas over time! If you wonder what some of the items on this list can be used for beyond the things I mention, look around online and you might be surprised, and get creative-inspired yourself for even more ideas ;^)

- pair(s) of **scissors** & **boxcutters**
- some **ball pens**, **pencils** and **sharpie / permanent marker** (if needed, also a pencil sharpener, unless you use a knife, or mechanical pencils, then plus spare pencil leads)
- package of cheap, simple **erasers** (to be cut to size and in shape for various things and uses, like spacers, for grip on something if glued or kept in place with dual-sided tape, or other small things of any shape)
- a **ruler** & a **compass** (to draw accurate circles)
- sheets of **paper** for writing and other purposes
- spare, sturdy sheets **cardboard** (just cut from old boxes suffices)
- a bit of old **newspapers** and/or packing paper (you get anyway from received packages) for a variety of uses, not just as packing / cushioning material, but also e.g. for storing apples in certain ways (see there), to cover things when you are about to make a mess, to soak things up like a cheap, weaker version of paper towel etc. etc.
- an old **egg carton** or three, which double as storage containers.
- **bubble wrap** you might be getting anyway for free from some things mailed to you, mostly as packing material, for some of us as stress relief (once you pop you can’t stop) or also as slightly thicker sheets of plastic.
- some **general glue**, **superglue**, **epoxy glue** (read up on how to use epoxy if you don't know) and/or **assembly adhesive** (also called construction adhesive, contact cement or rubber cement in some regions) as repair & creative use wonders
- **duct tape**, **reinforced duct tape** & **electrical tape** as further repair & creative use wonders
- **Thumbtacks**, **paper clips** & **rubber bands** (if anything, simply save those you get anyway occasionally, many uses, including paper clips as short insta-wire via bending), for obvious uses, but also creative ones, including bending those paper clips into shapes you might need.
- **Clothespins** (or similar clips) are an easy, removable way to clip / fasten all kinds of things onto others, not just laundry on almost anything suitable when your dryer (if you have one) is down, but also to keep bags closed (like trashbags) and cords organized, and if made of wood in a pinch you can also carve little shapes out of them as needed, with a sufficiently strong blade (but be careful not to cut yourself, yes I speak from experience…).
- a roll or three of **string & thin cords**, maybe some **zip ties**, for all kinds of quick fixes, keeping things tidy or in place, and a lot more

- Some lengths of **wire** (and an appropriate wire cutter / cutting pliers), also great is coated **garden wire**, and it often comes with a clipping mechanism attached to the box so no extra tool needed
- maybe a bit of **modeling clay** for making molds, using it as temp seals and similar uses.
- old leftovers from **candles** (for the wax) for new candles, as molds, sealant, to make DIY fire starter blocks, and a lot more.
- **Beeswax**, be it leftover from pure beeswax candles, or bought cheaply in bulk. It can act as a sealant, a soft mold, or to impregnate wood, leather, fabric or paper. For details on how to do any of this and its effects read up on it, it's a method our ancestors used for ages to create relatively water-proof but “breathing” surfaces. And yes, of course you can also make candles from it if you have wicks (including improvised ones).
  You can even use beeswax to make your own wax cloth to store various types of food more effectively by using old kitchen towels, cut up old, ratty bedding and similar fabric made of cotton or linen and washed within an inch of their life over the years. If you want to know how to do this without causing a huge mess, once more: Read up about it online, there are a multitude of DIY methods for this once upon a time essential type of food storage item our great-grannies habitually used, kept well, and made themselves to begin with.
- **Cotton pads, cotton wool & Q-tips** for numerous uses; those Q-tips made with paper sticks have other uses (even as makeshift wicks, please don’t try without understanding how to do it properly) than those made of plastic
- **Old fabrics**, like from ratty clothes, blankets, bedding, kitchen & bath towels etc., just as **old zippers & buttons** from them; for quick repair work, to use as cover for things, to give them another life as a rag or wipe, and on and on…
- A variety of **little boxes & bags and other containers** of any materials – fabric, plastic, metal, wood, including and especially just saved from when you got them anyway for free, and you now can store a lot of the above items more neatly in your “materials & helpful tools box”, but also use for a variety of other things in a pinch.
- Also part of this group are general household items like **baking/parchment paper**, **aluminum foil**, **cling wrap / plastic food wrap**, **freezer bags**, and **trash bags** of the sizes in use. All of them can be used and if needed cut to size for a great variety of improvised and creative problem solutions, from using aluminum foil to prepare food even over an open fire or twisting several layers of it into a semi-stable shape of whatever you need right now, to making a fruit fly trap out of a glass, a bit of vinegar or (even old/spoiled) fruit juice, a few drops of dish soap, and some cling wrap over it all and perforated for fruit flies to get in but not out, and drown in the vinegar / juice which attracted them.

The following only really make sense if you have an outdoor or basement storage area, and proper use for them occasionally or for preparedness-reasons:

- Some **scrap wood**, like wooden boards & beams, parts of old pallets, scrap two-by-twos or two-by-fours, and similar things. You can often get them for free from construction and industrial sites, or even ask a local supermarket if they have broken pallets they are tossing anyway. These can be handy for quick repairs and DIY projects and cost you

nothing, and in a pinch they can also work as firewood. For the latter make sure they are not impregnated or otherwise mixed with chemicals, like laminated or presswood, as the chemicals released can be dangerous when burned.

- A few old **garden pots / planters** of various sizes, and **plant saucers** (aka pot saucer, drip/plant tray), both preferably the classic unglazed red clay ones. They can be used as pretty heat-resistant and (with any drainage hole covered) open containers, and thus won't eat space as they are containers until you need them for something else.
  You can make a candle/lamp stove out of them, or a space heater - if you don't know how, there are videos and articles online to show you, but please consult more than one to ensure you are not falling for a bogus one or one with dangerous omissions, and that you really understand the physics and principles behind them.
  You can use them as separators or supports when building an outdoor open fireplace.
  You can turn them with sand or even just earth into a makeshift candleholder. If they are big enough and have no hole on the bottom or you can cover it well enough to be water-proof, you can use them as an improvised (mild!) cooling device with just water and sand plus a suitable food-grade additional container (how that works you can read up on, starting here). And on and on and on…
- A little supply of **metal rods, rails, nuts & bolts** and other pieces of hardware used for all kinds of DIY projects, including for some of the things mentioned above but by far not limited to. If anything, these items are also handy to have in a pinch when you need to quickly fix something, and the DIY store is closed (or down, or the roads to it are…). Sometimes you can get used old ones like these from construction sites where they would be thrown away otherwise, but still suitable for your needs.
- A few **bricks**, best the old fashioned red ones which are heat resistant, or at worst some cement bricks. Some old roof tiles or other ceramic **tiles**, even slightly broken ones as long as they are still big enough, are also useful. You can use them to create a makeshift fireplace to surround the fire and stack a few bricks to then have a way to place things between them, and from sufficiently large tiles even create a "stovetop" on top of the bricks, with the fire below the tile. Make sure the tiles are suited for such purposes, and maybe first check how other people build these things so you have a proper idea how to do it safely before you mess around with open flames and hot bricks & tiles. You can use them also to secure things and to build little anchoring points or even makeshift "furniture". There are a lot of uses for bricks, not just to build homes or BBQ fireplaces. Again, you can often get these for free from construction sites where they would be thrown away anyway.
- Even if you don't have a proper BBQ grill, as long as you have the materials to create an open fire in a safe space in your backyard or elsewhere, and have something to place it upon, like above bricks, a **grill grate** is very useful. You can often get old ones from garage sales, thrift stores, flea markets or online second hand offers for little to nothing. Just clean such old ones very thoroughly (you can read up on how to do that if you don't know), and you have the final piece to make a makeshift BBQ grill with your bricks or similar materials, and also put pots (oh hi, fondue pot!) or pans on it to boil things over the fire, with no need to figure out how to keep your pot safe above the fire without burning yourself as long as you build the makeshift brick base well.

One day, if you love BBQing, you could even build your own BBQ grill out of these items, like my grandpa and dad did: Old bricks they got for free from a demolition site just as a sturdy cement slab, used for the foundation to hold the coal. Combined with cement from a DIY store, and also set in the concrete between the bricks (all properly placed in alternating pattern for stability) some metal side rails, which were just just some fitting pieces of metal from the DIY store, to hold the grillage in place at various levels. They had to make sure that the size of this brick-built BBQ grill / oven was measured so that the grillage we got would perfectly fit in there with a little bit of wiggle room for easier handling. The space underneath was perfect to keep the coal and a bit of wood and other utensils out of the rain, easily covered with a wooden board cut to size (or anything else suitable, really). And I swear, this self-made BBQ grill was hands down the best I ever experienced, with the bricks holding the heat really well, so you could also roast potatoes wrapped in aluminum foil directly in the hot coals, coming out perfectly roasted that way like nothing else I ever got from other, “modern” BBQ grills. It was so good that we built the same kind of “brick BBQ grill/oven” three times in a row, each time we moved ;^)

This list can be expanded from here, but these are all common things you can get fairly cheaply or even for free, if you do not have them already, and which serve you as materials and tools to create all kinds of improvised small things around your household and beyond, to do little repairs, and maybe come up with useful things to make thanks to them, together with various other items or materials you get or have at hand.

Growing food & herbs yourself

Herbs & Food from the (Back)yard

If you have a (back)yard where you could have a (if needed/wanted, separate) section to grow your own medicinal & kitchen herbs, this is of course amazing. If you want to actually go even further into “mini-homesteading” by also planting at least a few potatoes and carrots or similar things each year, this can be a valuable addition to your nutrition while saving money – but don’t underestimate the amount of labor involved. It’s not just “dig a hole, put potatoes in, wait until I can dig out more potatoes”. The same goes for herbs you want to grow. All plants have specific conditions regarding soil, light and irrigation, and if they are not met they will grow poorly or not at all. They are sensitive to different kinds of pests that might damage or eat them entirely, and so most of your harvest ends up in the bellies of bugs, rodents etc., or weeds choke them off if you don’t keep weeding those out, literally.

Our (great)-grannies or even moms knew about this, and maybe you do already as well. If not and you want to get into this, you will have to inform yourself properly. This handbook is not one about gardening, that would require an entirely different handbook. Anything from your own herbs to even some vegetables & fruits in your (back)yard can be worthwhile or utterly needless for you and your personal plans and desires.
Be prepared though for setbacks if you are just getting started: Even experienced people can experience such. I still remember all too well the frustration my mom expressed, when in a new home she tried to grow lovage (sometimes called love parsley) as she always did among other herbs, and had chosen the perfect spot for it, yet the bushes wouldn’t properly grow, while everything else did just fine. She never figured out why, she just had to choose a different spot eventually for her lovage, and there it grew perfectly. The same way I remember how my father endlessly fought his private battles with the birds about the berry bushes, and still most berries ended up in bird bellies, especially after my mom and I forbade him to put up netting, as birds would often get trapped in it and either miserably die, or we had to carefully cut them free.
If you are not ready for these kinds of challenges, growing herbs & food is not for you, and that’s okay. Stick with what many grannies and great-grannies have been doing for a good long while: Getting your food from the farmers, grocers and nowadays, supermarkets.

Herbs from the windowsill

You can get potted herbs from some supermarkets, as well as some gardening shops. They come pre-grown in little pots, and you can keep growing them for a while on your windowsill to have fresh herbs at hand.
Just as with growing herbs in your (back)yard you have to be at least a bit aware though what kind of conditions these plants prefer, and thus choose the right window for them in terms of light & warmth, and know how little or how much water they need. If you do not or cannot give them the kind of light & water conditions they require, they will not grow well, or even wither away. In that case you might be better off and cheaper with just buying fresh herbs and freezing them, or getting them dried.

Most of these potted herbs come in black plastic pots, which do not look very pretty. You can use any kind of **planter / cachepot** to place the black plastic pot in, to look nicer. This serves an additional important function: The black plastic pots have holes at the bottom (or should have), so that any excess water can flow off, and thus not have your poor plant sit in a swamp underneath which rots away the roots. If you don't use a planter I highly recommend at least putting a plate underneath the plastic pot, or you will end up with a water-soil mix underneath the pot in no time.

Also be aware that many such potted herbs have very little soil for their roots, so they won't grow well for long before they are out of space and soil. If you want to keep them a while longer it might be wise to have at least a small bag of soil that's fairly universally suitable for most of your "windowsill herbs", and to **replant from the small ones** you get from a shop into a slightly bigger pot with additional soil. Be careful with the roots, so you don't damage them more than needed, but maybe gently untangle them at least a little bit if too compressed, so they can more easily spread in the new, extra space & soil you just gave them in a bigger pot.

Most such windowsill herbs can grow well for a few weeks or months, few for more than a year like this, and some even grow to amazing sizes. There was my legendary "Mr. Basil (no relation to Mr. Basil Rathbone)", who for one year was a true beast that tried to single-handedly turn my windowsill into a little jungle, or so it seemed ;^) Others always stay small.
You can with no issue cut or clip off small parts from these herbs, and for most of them they will regrow what you removed, or simply grow new shoots. Again the details differ from plant to plant, so you'll have to inform yourself about the details. Having some fresh, regrowing basil, cress, parsley, chives, and if you have plenty of space even a bush of lovage can be nice.

Growing sprouts & microgreens

Some people praise sprouts you can grow yourself on your windowsill as an amazing addition to your nutrition or as downright "superfoods", others deem them needless or even dangerous. The truth it seems, lies as so often a bit more in the middle.
In theory you need very little to do this: A flat bowl with water, a mesh tray or sprouting screen (usually made from plastic or stainless steel) which fits over it, and maybe a bit of additional fabric or suitable type of cotton wool to spread the seeds upon. As long as the seeds are sufficiently moist, and get enough light, they will sprout and grow into the kinds of sprouts you can eat, of course as long as it's from edible seeds like lentils, mung beans, soybeans or chickpeas, as well as wheat and others. You will just need to give them more water until you harvest them for eating, and if you use some kind of fabric or wool also replace that with each new sowing, to prevent mold or rot on it.

If you let them grow a bit longer, and usually then also with some soil or other suitable substrate involved, you get the next stage after sprouts, usually called **microgreens**: Small seedlings which have developed their first true leaves and done more photosynthesis before you harvest them.

The good points: Seeds are little packages of nutrients and energy which allow a plant to grow. Therefore a sprout cannot contain more minerals than what was already in the seed. What many sprouts absolutely do is synthesize certain vitamins (mostly Bs and C), so you can get a bit of those vitamins which were not present in the seeds .
Additionally, some seeds contain “anti-nutrients” like phytic acid or some types of tannins. When they sprout, parts of these “anti-nutrients” are reduced, which makes it easier for your body to absorb minerals like iron, zinc, magnesium or calcium from the food. There are ways to prepare such seeds though which can also at least partially deactivate these “anti-nutrients”.
Furthermore, these “anti-nutrients” are themselves not necessarily bad, as some have antioxidant and therefore beneficial qualities. It’s really a tradeoff. Some people also in general can digest sprouted legumes better than as seeds.
None of this though makes sprouts “superfoods”. You are just shifting the nutritional balance and way your body gets various nutrients from these sprouts. The overall amount of vitamins you get from sprouts, which are usually harvested after just a few days, is fairly limited when you consider the "additional" nutrition per ounce of sprouts vs. per ounce of seeds.
The light the seed and then sprout receives also of course means new energy is added, leading to the potential production of some antioxidative and other secondary plant substances, plus of course chlorophyll.
Microgreens which take a bit longer to grow tend to also contain a bit more vitamins and secondary plant substances, due to their longer growing time on actual soil / substrate with more photosynthesis.

The bad points: Something often ignored or not mentioned by those who recommend growing your own sprouts is the problem of pathogens. These sprouters, especially in home use under not exactly sterile and perfectly controlled conditions, are the perfect breeding ground if accordingly contaminated for E. coli, Salmonella and even Listeria, plus mold can grow there, too. A sprouter creates the perfect conditions for these pathogens, which like it moist, warm, with enough nutrients (like those seeds) and enough surface (the seeds and sprouter grid/fabric).
There have been serious outbreaks of such infections in various places in the world due to the use of sprouters, and it can happen even on farms which then sell sprouts as produce, e.g. in Germany and in the USA in 2011, with even fatalities as a result, and also plenty of others over the years there and elsewhere. Especially for people with a compromised immune system, pregnant women, children and the elderly eating raw sprouts is therefore often not recommended or deemed at least an additional risk.
Furthermore sprouts have to use up some of the energy stored in the seed, and especially young sprouts can contain a bit less caloric energy than the seed itself, at best, the caloric difference between seed and sprout is negligible. They look like more food, but in reality they contain mostly the same nutrients as the seed, plus added water in the cells. Once they have done some photosynthesis and maybe already turned into microgreens, the balance shifts more and more into having a bit more calories to offer as food, as the plant produces it from the substrate / soil they grow upon + light & CO_2 from the air (photosynthesis). They cannot produce nutrients out of nothing, so substrate / soil for minerals, and sufficient growing time for

metabolic processes thanks to light are needed, which takes time and the right conditions. Washing your sprouts or microgreens thoroughly reduces the risks, but does not fully eliminate them as long as you eat them raw. Boiling them means you are destroying through the heat most of the vitamins they produced, so you could just as well eat the seeds.

Realistic Perspective on growing sprouts (my take): Sprouts contain relatively little in real additional nutritional value compared to just eating the seeds, while introducing a real health risk through potential pathogens if you eat them raw for the vitamins. This does not mean you can't grow your own sprouts, but a healthy dose of realism about what they can and can't do for your health and nutrition is needed, and realism about their risks.
Sprouts which grow for 2-7 days just on water will do nothing for caloric intake if you eat them, compared to the seeds. Microgreens which need actual soil / substrate, more room and light and better ventilation, plus 1-3 weeks to grow before harvest, can contain minimally more calories, but with the amount of such plants you can realistically grow in your home the yield in both is negligible, barely more than a rounding error for your actual needs.
Regarding vitamins, the yield from sprouts is still to put it politely "moderate": you go from near zero to minimal – and that's being generous. You will struggle to grow enough sprouts in a normal home to create enough vitamins even just for one person for one meal every few days. Microgreens, which can also be grown from broccoli, beetroot, radish and some other vegetables, can contain amounts of vitamins that are a bit more a real potential addition to your diet. Given they need 1-3 weeks to grow, and you then end up with at best a few ounces of them if you just have a windowsill or two to grow them, the yield is still so small though that they are barely more than "garnish" or "a little microgreen salad every few weeks" for 1-2 people, unless you start your very own veritable indoor farm setup for yourself if you have the space for such.
The very real risk of pathogens, which at worst can even kill you (albeit the risk for lethality is very small) is the counterargument against "growing some food on your windowsill", and to be taken seriously.
My grannies and mom would've shaken their head about this "modern fad", and would've had some choice words in their own dialects to tell you to either get a backyard, or an allotment garden somewhere if you want to grow real food, not "this handful of tiny garnish". Sprouts do very little for your nutrition compared to the risks, so they border on being negligible nutritionally while introducing new "points of failure" (risk of getting seriously ill). Microgreens can be a bit better, especially since you can more easily wash them very thoroughly to reduce but not entirely remove the risk of pathogens, and they tend to contain more vitamins and other nutritional substances, plus potentially also more calories, but take too long to grow.
Such sprouts/microgreens at home cannot truly contribute meaningfully to your nutrition, when you look at how much "harvest" is possible in a normal home setup per month, vs. a not so little even if small risk of contracting a foodborne illness. That's why you won't see me growing sprouts or microgreens. I did it once out of curiosity, not for nutrients. I deem the barely-benefit not worth the hassle, space taken up, and real risks, and rather reserve my windowsill for those fresh, up to a point self-regrowing herbs which have more utility for my cooking & nutrition. If you deem the cost / benefit balance different, and / or have the room for such, or simply like the feeling of "growing a bit of my own food" (tiny as the amount in reality is), YMMV.

Saving money with your pantry

I have mentioned at various points throughout this document already how a pantry can save you money, time, and sometimes also nerves. In this chapter I am compiling this information for you to have it in one place, and add further ideas for you to try and see how they work for you.

1. **Less shopping trips, better prepared shopping trips**. Many people do not realize how much fuel and time they spend on grocery runs, and how much money they spend on takeout food, ready-to-eat meals, and impulse purchases. If you run a well-stocked pantry, and have your selection of recipes you cook in variations all the time, you just need to occasionally restock the things you're running low on. This reduces the number of shopping trips, takeout food bought, and impulse spending.
2. **Buy refill packages**. From detergents to herbs & spices, various items are often more expensive due to the packaging they come in. The same type of items, even brand, can often be bought cheaper in simple plastic bags you then refill in your own, reusable container. You reduce plastic and money spent this way.
3. **Buy when on sale, buy bulk & refills when cheaper**. Those 5% here, 10% there, sometimes even up to 50% are savings that will add up over time if you buy things on sale or in bulk, as long as you only buy what you are sure you will also use up before it goes bad. Be aware that bulk is not always cheaper, nor are sales always what they seem to be. Compare prices, how much you are really getting in weight for your pounds, dollars, euros or whatever currency. For this see also the next point…
4. **Be aware of prices and seasons**. Many people these days are painfully aware of their grocery bill, but have only limited awareness how much each item on it really costs. As a result they can often not really gauge if something is truly on sale, or if the store just raised the prices a little while ago, and now lowered them to the old price or even still a bit higher, and claims it's on sale. Similarly, many people are not aware how certain food items tend to be cheaper when they are in season. If you know this, you can stack your freezer or do some home canning sessions whenever something is genuinely on sale, or cheaper because it is in season.
   If you find it difficult to get a feeling for prices, recommend having a notebook or sheet in which you record how much you paid for each item you buy. Keep this up for a while, and you will see patterns emerge, notice price hikes, and what is genuinely on sale. This practice will train your mind to eventually automatically register what items cost, and make choices without the need of such a notebook or sheet anymore.
5. **Yellow label items are good**. How exactly supermarkets in your region label food that is on sale because it is close to its best-by or use-by date might vary – I know them from more than one country as usually being yellow. These products are still perfectly fine to eat, and often can be frozen for later use. All you need is a general idea of how long food is really still good beyond its best-by/use-by date, how to detect spoilage, what can be frozen, or how to turn what you get into long lasting, shelf-stable food, and you can get real bargains this way. Some stores and markets also sell things cheaper right before closing, so check if that's the case where you buy things.

6. **Reuse & Recycle**. We throw away an incredible amount of things, so much that our (great-)grannies would roll in their graves with how wasteful we are. Examples:
    a. The leafy greens on top of your (preferably, not sprayed) carrots make great seasoning a bit similar to parsley.
    b. The drippings of your morning bacon can stay in the (covered) pan and be used for making lunch or dinner, or be strained and collected in the lard jar / grease jar for future cooking & frying.
    c. Bones & bits can be boiled to make the most amazing bouillon almost no industrial-made bouillon can compare to. The remaining bones can be buried deep in your compost heap (if you have one), where they will slowly enrich it with minerals over time without attracting rats.
    d. Some types of leftovers can be used in an entirely different type of recipe, from dry bread turned into croutons or breadcrumbs, to that leftover bit of mashed potatoes kept in the fridge for tomorrow's stew to make it more rich, to that bit of wine on the bottom of the bottle frozen in an ice cube tray for future recipes calling for a bit of wine.
    e. Old sheets and clothes can be used as material for patching those you still use, or even turned into new items, from pillow casings from bedsheets to small bags and rags from anything.
    f. Glass jars with food bought from a store can be reused as food containers, if the lid is okay even for home canning.
    g. Envelopes you received can be cut to size and serve as sheets for a DIY notepad, and of course clean plastic bags and small items like rubber bands, wire ties and (if you know how to open them without cutting) zip ties can be reused over and over, including those you get for free.

    I could continue this list on and on and on. If you develop a feeling, a sense of how much can be used and reused and recycled, you will be surprised how much money you save, and how much less trash you produce.

    Whenever you are about to throw something away that is not truly rotten, moldy, or otherwise spoiled, or utterly defunct beyond repair, practice for a while a simple step before you decide to throw it away: Look up online how you might be able to use or reuse it. Once you know, you know, and can keep doing it. This way you will learn what our grannies and grandpas and their ancestors practiced automatically – not just because they knew, but also because they gave it thought before they threw anything away.
7. **DIY, the wise way**. This is not the infamous "dad tried DIY and now we have a hefty bill from those who had to fix his mess.". And how much you might want to practice this depends on how much time you have available, how much talent, and how much you actually enjoy it. So many things require fairly little real skill, or only minimal learning, and then you can make all kinds of things yourself from scrap, scratch, or cheap materials:
    a. Small or even medium-sized furniture from cheap or scrap wood, a few nails & screws, a bit of glue, and maybe a bit of paint.

b. Patching up clothes & bedding or even making simple items like pillow cases, small bags, rags etc. from scraps.
c. ouillon & bouillon powder from little more than kitchen scraps.
d. Ghee from butter when it is cheap / on sale.
e. Candles from wax leftovers
f. Fire starting material for your BBQ grill or fireplace from a wide variety of scraps and leftovers.
g. Knowing how to check a leaking faucet or drain yourself rather than having to pay a hefty bill for someone else to do this simple task.
h. If you have a backyard or sufficient windowsills, maybe grow at least a bit of kitchen herbs for your own use.

Just as with “Reuse & Recycle”, I could go on and on. Once you know how to do these things, even if a bit shoddy but “good enough” for your needs, you can save a lot of money with this, and make use of time you'd be spending anyway listening to podcasts or watching a show. Our grannies knitted socks, mended clothes, or yes also cooked while listening to the radio as their version of “podcasts”, or the family was chatting while everyone also had their hands busy with such things. You can do the same, and might discover entirely new hobbies that way.

8. **Second-hand items**. Many things do not have to be new, and sometimes older versions are even better than what is sold nowadays. If you can find the kind of kitchen utensils or tools or whatever else you are looking for cheaper in thrift stores, at flea markets or online listings and marketplaces, you can get real bargains.
   If you need something, first get an idea what it would cost you if you buy it new from a store, then check these places for second-hand goods. Beware, because of course some people try to sell half-broken junk or try to sell things for the same or a higher price than you would pay at a normal store. If you have a decent sense of what things really cost, and of the real quality of items, you can nonetheless save a lot of money that way while dodging the sketchy crap and overpriced offers.
9. **Trade and barter, share and source differently**. See who in your area might have skills or resources you need, while you could offer them some of yours. Not everything has to be paid for with money. Some examples:
   a. If neighbors down the street need help with harvesting their apples, and you can get in turn a bucket or four of fresh-picked apples, that can be a good bargain if you have the time for it.
   b. You have an apple tree in your backyard, a neighbor down the street a plum tree. You can help each other harvest, and trade the fruits of your labor, so both have apples and plums with no money exchanging hands.
   c. If you are an accountant, and the lady down the street is a hairdresser, you can do some accounting for her and she gives you haircuts.
   d. You can mow the lawn for the old lady down the street, who in turn occasionally mends your clothes, because your needlework looks like you ran a lawn mower over the fabric.

    e. Not everyone in a family or friendly neighborhood needs a pressure canner, if they are willing to share them with others, who in turn share some of their tools as needed and with those who treat said tools well.
    f. Books and even movies can be had from libraries, including read as ebooks from online libraries like archive.org and others (where available), rather than buying them unless you really want to own and keep them.
10. **Quality can be cheaper, and so is proper use**. A cheap pair of shoes might cost you a quarter of what a good pair would cost you, but the good pair can last a lifetime, the cheap ones will fall apart within a few years. If you buy cheap, you often buy far more often with such items, than buying well once. This goes for tools, clothes, cooking utensils, and so many other items that can last you long – or not. Even with consumables like toilet paper or detergents you can often save money if you know what quality makes sense and you will need less for the same effect.
    This does not mean spending needless money on brand names and fancy packaging when you can get the same quality from no-name or store brands. It means having a real sense for quality, and how much you really need to get the job done, be it how much toilet paper to wipe rather than pile up a needlessly big bundle, or how much shampoo to wash your hair rather than pour a needlessly big blob into your hand, or how much to dilute dish detergent for easier dosing. All these little things seem little, but if you combine them together and over the years, it can make a significant difference for your wallet.
    Also part of this category is not getting tons of fancy stuff you do not really need: Tons of different cleaning products if just a handful or two do the job just as well. Loads of ingredients and seasonings which then gather dust in your pantry, until it's time to toss them. Lots of clothes you hardly ever wear and then throw away or donate to a charity shop. That fancy gadget which sounded cool but then sits around forgotten in a cupboard. Ask yourself before you buy things: Do I really need it? Will I really keep using it? Will it really bring me lasting joy? Is it really that useful? And also avoid impulse buying if you are not really sure how wise it would be, and rather sleep on it for a night or five before you make purchases you might not need.
11. **Use less for more**. This does not just mean, as mentioned under point 9, using less shampoo or toilet paper or whatever else than you really need. There are a lot of areas where people waste a lot of money, e.g.:
    a. Consider whether you really enjoy or need your living room illuminated like it's lit by floodlights, maybe a bit less intense, calmer indirect light will be nicer and consume less electricity. What other devices do you use often or even every day, and are there cheaper alternatives? You can keep your coffee hot in a thermos, you don’t need to keep the coffee machine on for that. Changing the energy saving settings of your computer, or switching devices completely off (or unplugging them) rather than standby if not in use for a while can also add up in savings for your electricity bill.
    b. Ask yourself if running a dryer – which consumes a lot of energy – is really needed, or you could as well use a drying rack. Also make sure your washing

machine is well-loaded but not overburdened, so you get the most out of each washing cycle.

c. Do you need to use a blow dryer, or could you just as well let your hair air-dry, and maybe even stress your hair less that way while saving electricity?
d. Check your subscriptions – how many do you really use, how much joy do they give you, and which could you just as well cancel or replace with a cheaper or free alternative that brings you the same joy?
e. Good ventilation and sunlight management can reduce your need for AC in summer and heating in winter.
f. Unless you live in an area where the tap water is genuinely unsafe to drink, there is no need to buy bottled water. In many industrialized nations municipal tap water is highly regulated, and at times actually of better quality than bottled water. You can easily save a hefty amount just with that every year.

Which of these things feel so convenient or bring you so much joy that you wouldn't want to give them up will differ from person to person. A lot is often done though not out of genuine, enjoyable convenience, but out of mindless habits, out of not even thinking how much is wasted or barely used. A bit of mindfulness and consideration can go a long way in this regard.

12. **Home-cooking & making your own beverages**. The amount of money people spend on takeout, eating out, pizza delivery, or ready-to-eat meals can be mind boggling if you compare it to the costs of ingredients and energy. There are lots of easy to make, simple, and delicious recipes even a total newbie can make well enough. Cooking doesn't have to be time consuming, unless you want it to. Your well-stocked pantry and your dozen or two of easy to make recipes can feed you well and save you a lot of money. There is also no need to buy your lunch, you can pack your own lunchbox and save a lot of money while eating well and healthy.

    In a similar way there is no need to spend a lot of money on coffee to go or other beverages you buy when out and about, if you always have a bottle of water or your favorite drink – cheaper bought at a supermarket – with you, or your thermos can with coffee if you want that as your to-go beverage to keep you going.

    And if you like smoothies, there is no need to buy expensive bottles at the supermarket if you can invest once a little bit into a decent smoothie maker, and then buy fruits when they are on sale, make your own smoothies, and freeze them. These smoothies will most likely be more delicious, and definitely cheaper.
13. **Cook in batches**. Cooking a larger pot uses less time and energy per pound of food you cook, than the same amount of food in smaller pots over time. By practicing batch cooking and then freezing or home canning the food, you save on electricity and time, and don't have to cook when you don't feel like it or just have no time for it right now. Storing the food in reusable freezer boxes or canning jars adds another layer to saving money this way. Even rice can be batch cooked and frozen that way!
14. **Consider transportation alternatives**. Depending on where you live, this might be possible or not. If public transportation barely exists or is unsafe in your area, of course that is not a good option to consider, just as walking rather than driving for shorter distances might not be either. If good public transportation is available though, you might

save up on fuel and time if you opt for that, rather than your car – at least for some trips. Even if public transportation and walking, or riding a bike are not feasible for you, see if some of your neighbors or co-workers in your area and you can get a ride share going for some trips, and thus save up on fuel costs.

15. **Limit disposable products**. If you can freeze something as well in a reusable freezer box rather than throwaway freezer bags, that box will save you money over time. If you have proper plates and cutlery you clean after use, and cloth napkins you can wash, it will be less expensive than constantly buying new throwaway plates, utensils and paper napkins. Using your own shopping bags (cloth or sturdy plastic) over and over also reduces not just trash, but money spent if stores don't hand out shopping bags for free anymore. Reusable silicone lids help you reduce your cling wrap and tin foil use. Paper towels have their place when it saves your kitchen towels or cleaning rags from becoming soiled beyond salvaging, but limiting their use can also save money over time. The list goes on and on.
16. **Declutter & sell / give away what you don't need**. You might have a lot of things in your home which just catch dust. Books you once read and know you will never read again. Clothes you have not worn in ages. Tools or kitchen utensils that are catching dust, or even rusting away and you know you will never need or use again. Do a good inventory from time to time to prevent "clutter graveyards" of items you could just as well either sell and thus get at least a bit of money back from them, or barter for something else, or give away to a charity shop, or someone who has use for it or would enjoy it more than you do. Having a less cluttered home makes it easier to maintain a home well, and also to keep your mind and life clutter-free.
17. **Keep a budget, stick with the plan**. For some of us this is ingrained habit and way of thinking, for others a difficult task. If you struggle with keeping a budget and staying within your means, try running an actual budget list in which you note down how much you spend, on what, and where. It might help you to develop a sense of how much you really spend on what, and which things you could cut down on or stop buying altogether, without really impacting your life negatively.
    Allocate specific amounts for each general area of your monthly budget, like food, entertainment, transportation, savings, payments, bills, rent, and so on, and stick with it unless emergencies arise.
    Use fewer cards and more cash – because money that is not in your wallet you are not tempted to spend. If needed, even divide the money you have each month and week, according to your budget – place it into envelopes, so you only spend as much as you allocated for yourself and that week. You can do this not just for weekly budgets, but also have your separate envelopes for specific, upcoming payments you will do in cash. If not done in cash, you can have your list of specific amounts that have to stay in your bank account for upcoming payments – no touching those, while those envelopes are for the money you spend directly on things like groceries, fuel, and so on.
    If you go grocery shopping, use a shopping list, and by default buy only the things on your shopping list. If you also go for "yellow sticker items" / on sale items, have a clear limit of how much you spend on these per trip or per month, so you don't end up splurging the money meant for your electricity bill.

Keep an eye on the news

To run a pantry and some general preparedness is your foundation, but if you are not aware of what's going on in the world that could affect your future supplies, you are still sleepwalking into whatever comes next.
If on the other hand you have a good understanding of where your food and other supplies come from, and what impacts their availability and prices, you can often adjust your own behavior – including purchases in advance, before supply shocks or steeper price increases hit the shelves.
Example: When the Russian invasion in Ukraine started in February 2022, one of the first things I informed myself about was "what are Ukraine's main exports?". Turns out, Ukraine is one of the biggest global producers of sunflower oil. So I knew that we would probably see supply disruptions of sunflower oil and corresponding increases in prices for a while. And I knew that consumers would adjust their purchasing behavior, and switch to other cooking oils, which in turn would probably also see price increases. If the supply disruption lasted longer, even food which uses a lot of oil, like mayonnaise, would also get more expensive. I don't use much sunflower oil, but I immediately stocked up on the main cooking oils I use, and on mayonnaise – more than I'd usually buy, but still in reasonable amounts and with clear awareness of their typical shelf life. So I merely purchased in advance what I would have otherwise gotten later – but when prices were still relatively "normal". The entire massive supply & price shock that hit cooking oils then in 2022 passed me without the slightest dent to my wallet.

If you want to run your pantry really well, have a basic understanding how our global economy and supply chains really work, with core elements such as:

- Fuel & Energy impacts everything, from agriculture and processing to logistics. Supply and price shocks in these areas tend to eventually end up also in the prices of everything else.
- Fertilizer is important for supplying the world population with enough calories – even seemingly moderate increases in price or drops in supply can have considerable impact downstream. Higher prices for grains can also have a downstream effect on the availability and price of dairy & meat, because grains are also animal feedstock.
- Agriculture has time windows and is dependent on weather. If issues with the supply with fuel, lubricants and/or fertilizer happen, or the weather in major growing regions is bad, it will hit your grocery bill typically between 3-9 months later.
- The food industry and packing industry also play a major role in the prices you pay for your food and many other consumables, containers and other goods. They need petrochemicals for many things, and other raw materials. So supply and/or price shocks in the oil markets also affect packaging materials, just as those which are related to metals (needed for tin cans).
- Labor strikes or closures involving major suppliers or companies in any of the fields above, or similar events can also cause supply disruptions, and due to the latter then price increases at least for a while.
- Wars, extreme weather events, natural catastrophes and similar events can impact any of these things, too.

If you read and watch the news with an eye for and understanding of these things, and how fragile the “Just in Time” supply chains really are, you can often pretty easily predict future effects for availability and prices of the goods you commonly buy – and position yourself. If you buy a year’s supply of cooking oil before prices go up 50%, that is 50% savings on your bill for cooking oil. I am sure you’d love a big 50% sale on cooking oil, wouldn’t you?
Think of this like an “advanced purchase on sale” – because you can anticipate the price increase. If the predicted increase in prices does not happen, you usually don't lose anything – you simply use up that cooking oil or whatever else you purchased in advance, as you always would anyway. You merely got a bit more than you’d usually for your pantry. It is extremely rare that prices for food and consumables significantly go down, special sales aside, so usually you are on the safe side for your wallet and pantry with this strategy.

This “keep an eye on the news” is not doomscrolling. It is the exact opposite: You are calmly keeping an eye on events which might impact you and your household and position yourself accordingly. You don’t agonize, you organize. You are not anxious, you are aware. You don’t panic, you are prepared. You read not merely the headlines, but between and beyond the lines. Mainstream media tries to sell you a circus, you buy solid goods for your pantry in advance.

You can set up key search terms for your preferred search engine, to easily check news, consumer reports and reports from important organisations like USDA, FAO, IGC, IEA, OPEC etc. regarding

1. fuel & energy
2. agriculture & weather
3. production & processing
4. logistics & infrastructure

By checking information about these things once a week or once a month, you can keep a general eye on what is going on in these things. And of course once you understand how there is no dairy fairy waving a magic wand to make milk and cheese appear on the supermarket shelves – instead, it's an incredibly complex, global supply chain from fuel, lubricants, fertilizer and weather to animal feed stock and pastures and water supplies to herd sizes and health to food processing, and a lot of logistics between all of that, you can more easily gauge whether your cheese half a year to a year from now might be more expensive, and if now might be a good time to stock up on some milk powder.

You don’t have to do this – but it can make a serious difference for your wallet over time, as I illustrated with the Ukrainian sunflower oil example above. I have seen many such events come and go over the decades, some smaller, some with major or even massive impacts. By smartly pre-positioning myself I was much less impacted by them than most others around, or not at all.

If you think it is too much hassle to go through all these four sectors from time to time, you can just keep a general eye on news with the kind of awareness which might sometimes help you realize when to stock up something, like with my example above: A quick search for “Ukrainian exports” was all I had to do in late February 2022.

Alternatively you can also use an AI (including one you could set up yourself on your own computer, if you're interested in doing so) and give it a prompt once a week or once a month. Below is an example of such a prompt you can adapt to your own needs. The placeholder [YOUR REGION] in the summary section needs to be swapped out before use – e.g. "North America", "the UK", "Australia" etc. – so the AI can tailor its risk assessment to where you actually live. The transport corridor examples (Suez, Panama, Mississippi) are already more internationally oriented, but you can of course also alter or expand them for those most important for your region.

Please search the internet for current news and reports from the last 7 days covering the four topic areas below. The goal is a structured situational assessment: Are there signs of impending shortages or price increases for staple foods and essential consumer goods over the next few weeks up to the next harvest season (~12 months)?

For each of the four areas, please provide:
– A brief summary of the most important current developments (2–5 bullet points)
– An assessment: No significant signal / Worth monitoring / Elevated risk
– Links to the most important sources

AREA 1: HARVESTS & STAPLE CROPS
Search topics: Harvest forecasts and crop failures (grains, wheat, corn/maize, rice, soybeans, rapeseed/canola, sunflower), droughts, floods or extreme weather events with crop relevance, reports from FAO, USDA, IGC or other agricultural market organizations, export restrictions or disruptions from major producing countries, pest outbreaks or plant diseases of significant scale.

AREA 2: ENERGY & FUEL
Search topics: Price developments for crude oil, diesel, natural gas and electricity, supply disruptions or shortages (pipelines, LNG, refineries), geopolitical developments affecting energy markets, price outlooks and expert forecasts (IEA, OPEC, analysts).

AREA 3: TRANSPORT & LOGISTICS
Search topics: Strikes or labor disputes in freight, shipping, rail or ports, congestion or capacity problems at major ports or transport corridors (Suez Canal, Strait of Hormuz, Panama Canal, Mississippi River, etc.), freight rate changes (container indices, fuel surcharges), logistics disruptions affecting food supply chains.

AREA 4: FOOD INDUSTRY & PROCESSING
Search topics: Strikes or operational disruptions at mills, slaughterhouses, dairies or other food processing facilities, factory outages or fires at major food producers, announced price

increases from major manufacturers or brands, supply shortages of packaging materials or key inputs.

SUMMARY: Please end with a brief overall assessment: In which areas do you currently see the greatest risk of price increases or supply shortages in **[YOUR REGION]** over the next 3–12 months? What do you recommend keeping a particularly close eye on?

Please provide all sources with direct links. Search in both English and any other relevant languages for your region.

How to get started

Over more than 200 pages I gave you a massive amount of information by now, and your head might be spinning and you wonder where to start. Here is a simple path for starting from zero, to be adapted to your own needs and desires:

- As I mentioned in the beginning: **Begin with small steps**. Get the little bit extra here and now, just 1-3 pieces extra during each shopping trip as outlined under the “Basic Rules & Guidelines”, if your budget allows for it, and especially so if something is on sale anyway. Focus first on what you use a lot and/or has a long shelf life, and you are fairly sure you will use up in reasonable time, including with what you already have.
- If you feel like “but I have to / want to get my pantry/supplies going fast”, take a deep breath. Pressure or anxiety, just like rushing anything like that, tends to lead to mistakes and costly decisions. Unless a famine is right around the corner, most likely you have plenty of time even if you think food prices might be rising soon-ish. If the latter is the case, you can accelerate things a bit if you have the budget for it, but don't start hoarding without thinking – instead, think about what extra margins are most important to build. Don’t go buying things out of fear, but out of joy and with a clear-eyed focus of what you want and need. Think of anything you do in this regard not as “protection against crisis”, but “**expanding my abundance**”.
- If you don’t know already fairly well, **learn how to cook some simple, basic meals** with some of the ingredients on this list. Pick just a meal or two you really like and which is simple, look up how to make it, and get going. Once you get the hang of it, try your hand at the next, and the next.
- **Begin looking around in your home**: Where could you make better use of unused storage space which will not make your home more cluttered? Start playing “home tetris”,which at once trains your creative thinking and problem-solving skills. This extra space you create might come in handy eventually, and be it to make your home more well organized, while you have extra spaces for your stashes.
- **Reuse & recycle**: Unless you don’t want to, start thinking about how much you throw away every week and month, and how much you could reuse in place of things you buy. I outlined a lot of such things above, and you might come up with your own ideas. Done right this will also train you in looking at the world through both a lens of abundance and also “thrifty, but not stingy” thinking, and creative and problem solving skills.
- **Start thinking strategically**: What do you really need frequently and most importantly, what are more nice extras to have? How much do things really cost? Can you get them cheaper if you buy them in slightly larger packages and store them in different ways? Are things on sale somewhere? How can you reduce the trips you do (costing you time and potentially money, like through gasoline) by making your shopping trips more efficient? Look back at your past month, or couple of months, and what you have planned for the coming days and weeks, and make adjustments.
  This will at once train your mind to become more organized and efficient in your habits regarding your household and pantry, but also set you up to build your pantry in more efficient ways than randomly buying random stuff.

- If your budget is limited, looking through **a lens of greater efficiency** is especially important. You can make every bit of money go way further if you are smart about it. Maybe sit down and make a list of what you have spent money on last month. Also note down what you spend money on this month, and the next. See where you have "money drains" in your life that would be needless if you were more efficient. That is money you can spend on your pantry and other nice things, if you go about things smarter.
- **Always keep your actual goals in sight**: Don't think you have to do what you hear and see others do. If your goal is having a small pantry that can last you 2-4 weeks without needing to shop for anything, then that is your goal and anyone talking about "this is how you do things to last for months" is barely relevant background noise.
- **If you want to speed things up** a bit, although I usually advise against this for many reasons as laid out before: Make a list of the things you can think of which you tend to eat most often, and are truly nutritious or important for your morale, be it your morning coffee or your favorite treats. Give yourself a few days for this. Then see if you can find good, cheap sources for a reasonable amount of those "important extras" as the first items to expand upon, maybe cheaper if bought in bulk (in reasonable amounts!).
  This doesn't mean the giant 100 pound bag of rice & beans, or expensive "survival food" or piles of pre-packaged meals. It means e.g. a selection of rice and/or pasta, canned fish/meat and/or texturized plant protein, a bit of extra cooking oil, and a selection of your favorite legume(s), canned vegetables in container sizes you usually consume, and amounts you would consume in reasonable time. Maybe add some vitamin C, as otherwise your pantry most likely will still be Vitamin C deficient. A few nuts & dried/canned fruits and/ or applesauce / pureed fruits can complete the nutritional profile of your pantry if you like them.
  Add a bit of extra or slightly larger packages of herbs & spices, condiments & seasoning, and a few packages/jars of bouillon, and maybe one bottle extra of each nutritional supplement (with a long shelf life) you consume anyway regularly, and you already got yourself a good basic pantry together. Sprinkle in your favorite treats and "morale boosters" here and there, and you've got your basics.
  One trip to the DIY store or around online stores, comparing prices and quality a bit, can get you if you want to also a basic selection of everything from duct tape, garden wire, a few rolls of extra trash bags, and a few other simple "home repair & emergency supplies" like flashlight, spare batteries, little first aid kit – all won't cost you much.
  Strategic thinking can save you money if you do this right, rushed action can cost you money, time and nerves needlessly. Remember: **Get what you use, use what you get**. It can be tempting to get all kinds of gear and fancy pantry food and what not, as it gives you that dopamine kick of "getting & having", but it won't necessarily make your pantry & preparedness better if it is too much / the wrong stuff, just costing you more money.
- **Focus at first always on a lower tier** of the pantry & preparedness you want to build. Don't get a few things that would last you for tier 3 and ignore everything else you do not even have tier 1 or 2 for, unless you know you can and will reliably get those other things soon, too. By building a good margin for a few weeks across multiple areas, you are building at once the habits you will need to increase into a larger pantry and supplies to run eventually. Remember, Rome wasn't built in one day, either.

- **Don't think about any long-term commitments** of any kind, any long-lasting systems **when you are just starting out**, and are still getting a feeling for things. If you do not even yet have the habits of running a good pantry that would last you 1-3 months and means of water storage & purification for 1-3 weeks, you will most likely be overwhelmed if you try to get right away into large scale pantry organization and water purification & storage systems, and home canning, and various types of DIY projects. That's too much. Pace yourself, begin with smaller projects and things to try out, before you go for the bigger, more committed ones if you still want to at all. This is also true including and especially if you feel you want / have to build everything faster: You can speed things up a bit, but not rush them without inviting failure.
- Keep mantras like these in mind: "**Get what you use, use what you get**" and also "**Keep it simple and straightforward**" and "**You are building efficiency & ease, not pressure & stress**" just as "**You're creating not merely to survive, but to thrive**" and "**This is for abundance, not for scarcity**". The more you try to rush into complicated stuff, highly involved things, the more you do the right things for the wrong reasons through the wrong lens, the more you are inviting failure, especially when you are starting out.
- **Stay realistic and reasonable**: Most likely you will never need giant amounts of food & supplies, they are the extra on top if you want to. It is more important to have a good, well run pantry that will last you a month or two than having a badly designed and run aiming at half a year. You get steady benefit out of it if primarily focused on making things cheaper and easier for yourself, to cover the little hiccups which are more likely in life and the short term disruptions or price spikes, while at the same time it can become the foundation for something bigger if you want to eventually build toward something suited to cover a couple of months or more. Hoarding unreasonable amounts of food you will eventually throw away is the antithesis of this.
  Build for a week, maybe at most two weeks of enough drinking water & other beverages "in case of hiccups", and maybe 2-4 weeks of food, with only a few extra things if they are much-used, cheaper that way, and easily stored beyond that level. After that you can then build from there if you want to.
  Especially when it comes to water supply, it can get very storage-intensive very fast, while in reality in most regions of the world you will never need more than a few days in storage even during the worst hiccups, so 1-2 weeks are already a very good margin. If in doubt, you can simply get a simple, cheap but reliable way of purifying available water for a little while, and maybe get a folding canister or five, which can be easily stored away on some corner, and which in a pinch you can quickly fill with water if you know there is a temporary shortage coming, like before a storm warning or maintenance work that could impact the municipal water supply for a day or three.
- **Keep learning**, keep expanding your knowledge about things, and your ability to do things in more than one way, and have fun while you do so and try things out. The more fun you have while you expand the options you have, the more motivated you are, and the more you can have ease and peace of mind even if hiccups in life occur. If you stress yourself out over any of that, your options automatically dwindle as your focus narrows under stress, and you end up hyper-focusing on needless or counterproductive things.

- **Anxiety / Hoarder Caveat**: If you find yourself consuming too many “prepper videos & articles” and find yourself being more and more anxious, take a step back and take inventory not of how much you have or have not in your pantry & general preparedness supplies, but inventory of yourself. you might be sliding into hoarding and the mental health issues that lie behind it.
  Don’t let people talking about doomsday scenarios or the kind of massive disruptions often heard & seen in “prepper” material get into your head. You are not building a pantry for a doomsday / giant famine or wartime scenario, you are just building a better general preparedness for the hiccups of life, which happens to also help in such scenarios. If needed, seek professional help and/or talk with trusted friends who are not neck-deep into prepping or similar activities, and definitely take a break and calm down. If you slip into anxiety and hoarding behavior, your pantry & general preparedness will suffer from it, and so will you.
  If you look at your pantry & stashes and feel anxious and nervous rather than abundant and calm, stop. If you find yourself obsessing about preparedness or more and more worrying about potential future scenarios, stop. These can be warning signs of catastrophizing rather than calmly, happily running a pantry and having a bit general preparedness, “just like our great-grannies did”. Take inventory of yourself if you notice such warning signs, and let your pantry rest for a while. You can go back to it later when you have calmed down and can practice it happily rather than with anxiety or hoarding. **You are supposed to organize your pantry, not your anxiety**.

For a step by step path, starting from scratch as a total newbie:

1. Make sure you are in a **calm state of mind**, not hungry, not scared, while you create your first plans and steps about your pantry & general preparedness.
2. Think about **what your actual goals are**, not fantasy-you, but the real you, with your real capabilities now, and which you could realistically achieve in the coming weeks, and only if you want to after that in a few months.
3. Think about whether or not you want to additionally also build some basic “**hiccup preparedness**”, and if yes, note down what items you would need for that realistically and actually use (remember: get what you use, use what you get).
4. **Take inventory of what you have**. I recommend doing a real basic list you create to actually see it in total. Be aware of your capacity, not just your inventory.
5. **Take inventory of your habits**: What did you use the past month or three a lot, and how did you go about getting and doing those things? Note what things actually cost you in time and money, and where you could be more efficient.
6. Note which of the things you use a lot have a **good shelf life**, or can be replaced with shelf-stable ingredients with a good shelf life and similar nutritional value. If needed, step by step learn how to make those things from such ingredients.
7. Note where you could save time and money, and do things more efficiently from now on. Remember: **Skill beats stuff**, so also keep learning, not just buying. The better you understand rather than just emulate, the better your practice.
8. **Pace yourself**. Give yourself at least a few days to create those lists and think them and your goals through before you get started, and make adjustments as you go.

9. Then start **getting those extra items** for your pantry & general preparedness, step by step, as they make sense and as you use what you get and get what you use. Make good use of sales, when things are cheaper in bulk sizes suited to your goals and needs, and start reusing other things to ease your path into this new way of doing things.
10. Remember: This is to **make your life easier, safer and better**, not more stressed, unsafe and worse.
    a. **Don't stretch your budget, stretch how far your budget can get you**.
    b. **Don't clutter & hoard, organize your life and home better**.
    c. **Don't build piles and anxiety, build margins and abundance**.

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This handbook was written as a true labor of love, and is meant to stay free. Share it, print it, pass it on – just don't sell it. The knowledge in it was passed down to me and those who came before me for free, by my parents and grandparents and many others, and by generations of people who not just survived, but often even managed to thrive in good times and bad, in war and peace. The least I can do is pass this knowledge on the same way, and so can you if you want to.

Therefore I dedicate this love letter of nearly 140,000 words in the shape of a handbook to all our parents and grandparents and those who came before them. It was written by me, a child of half of Europe and beyond, but I'm just a messenger of countless voices who came before. And I dedicate it to the greatest mother of us all: Earth, providing us with life itself and bountiful food to nourish our body and spirit – it is also a love letter written to her and her gifts, and all that grows and thrives upon her.

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This handbook was written entirely by a human being. AI was only used afterward to assist in fixing linguistic errors and general proofreading, as the author is not a native speaker of English.

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